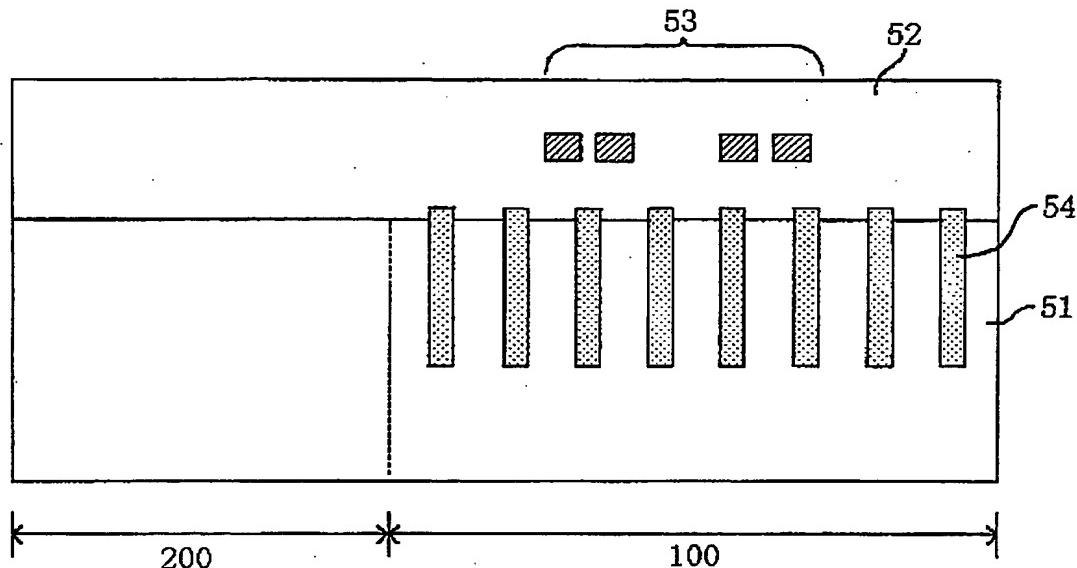


Fig. 1



51 SEMICONDUCTOR SUBSTRATE
52 LAYERED FILM
53 INDUCTOR

54 LOW-PERMITTIVITY FILLING MEMBER
100 RF CIRCUIT AREA
200 DIGITAL CIRCUIT AREA

Fig. 2

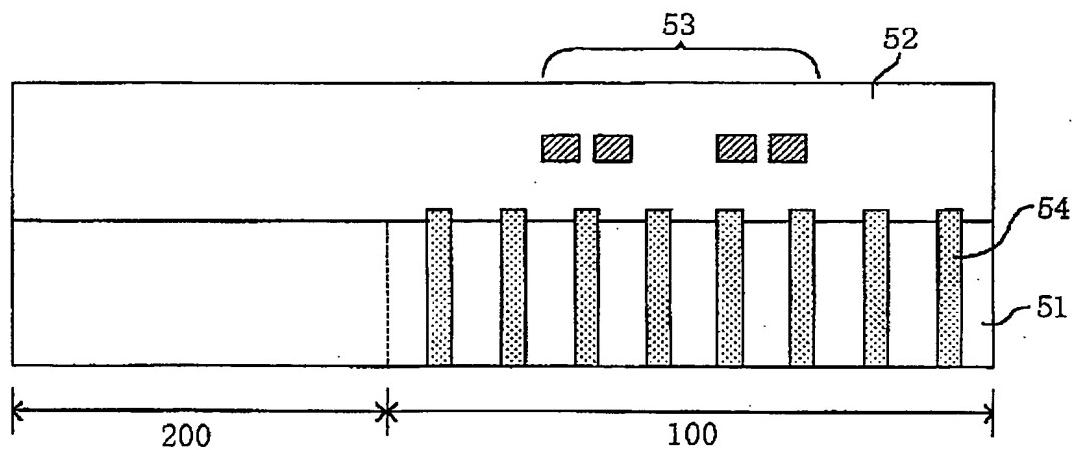


Fig. 3

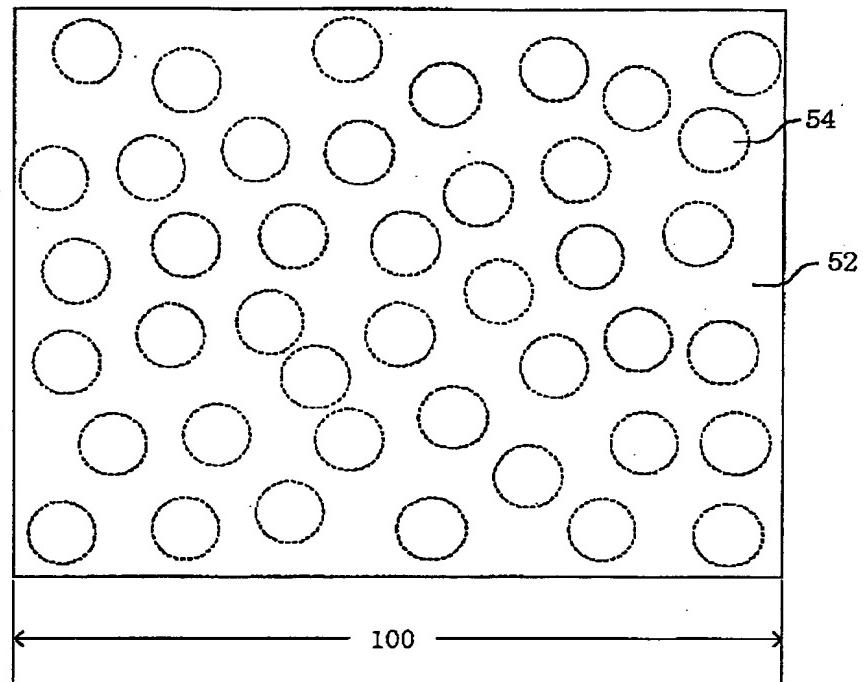


Fig. 4

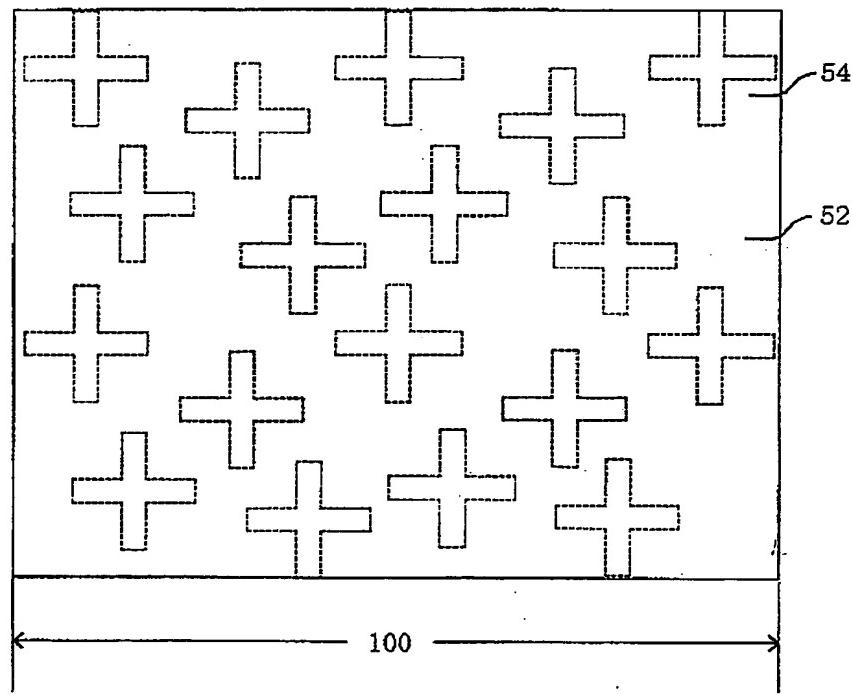
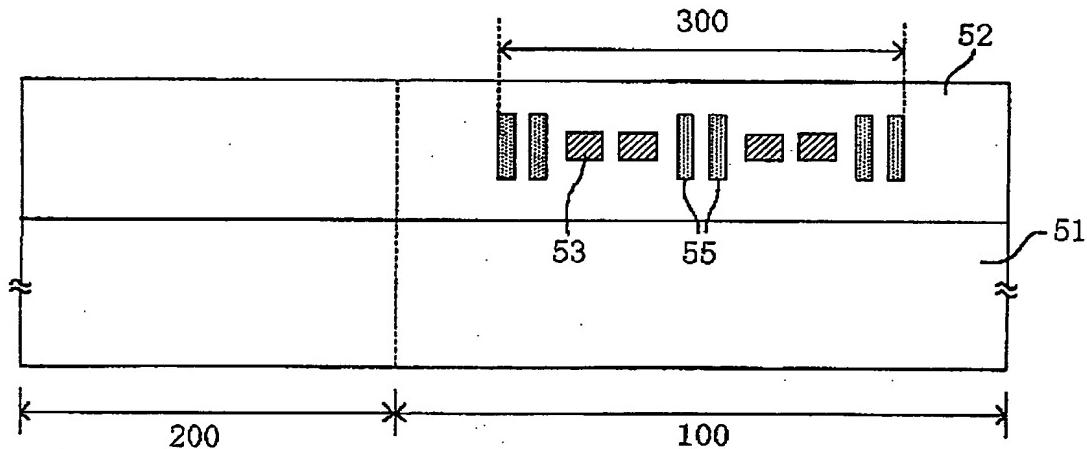
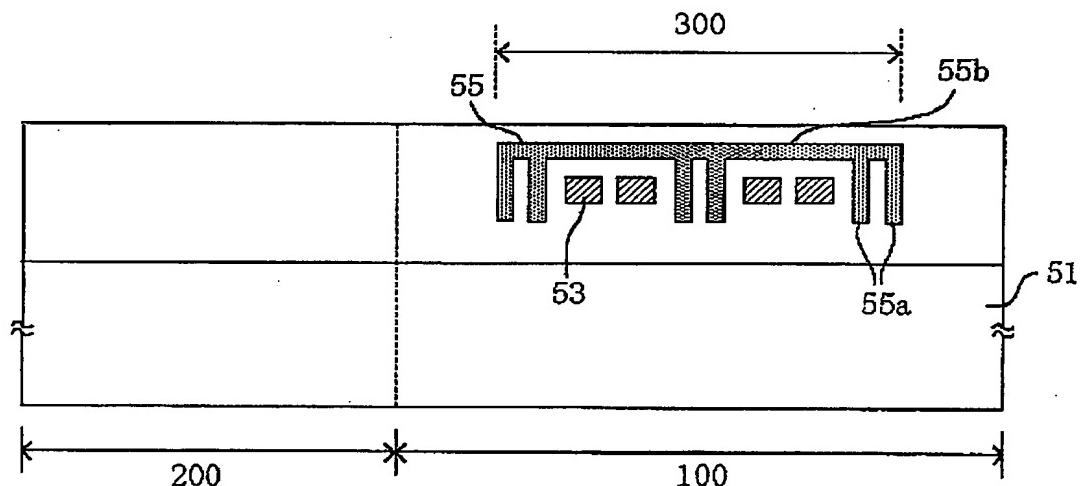


Fig. 5



55 HIGH PERMEABILITY FILLING MEMBER
300 HIGH-PERMEABILITY AREA

Fig. 6



55A ROD MEMBER
55B PLANE MEMBER

Fig. 7

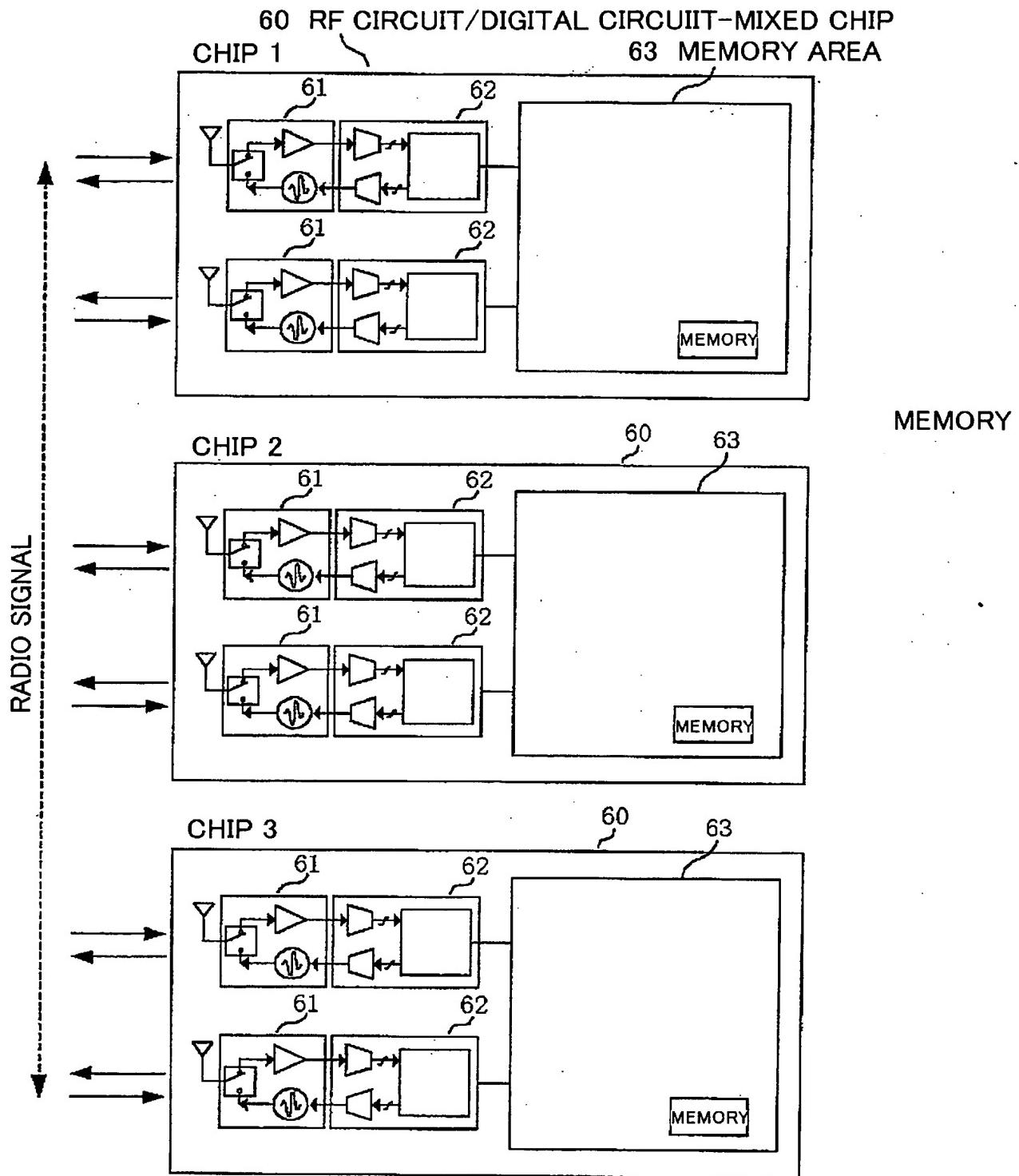


Fig. 8

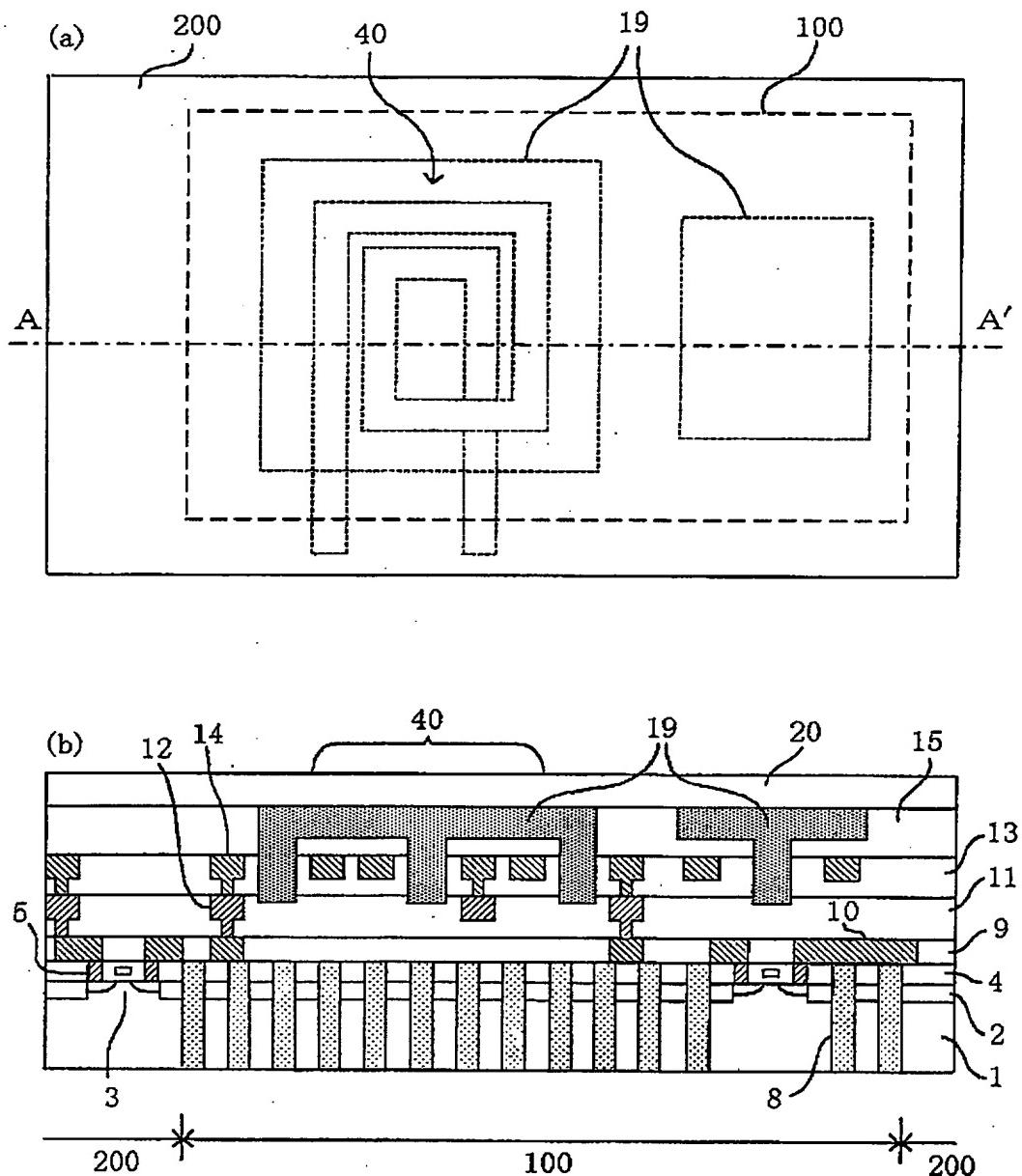


Fig. 9

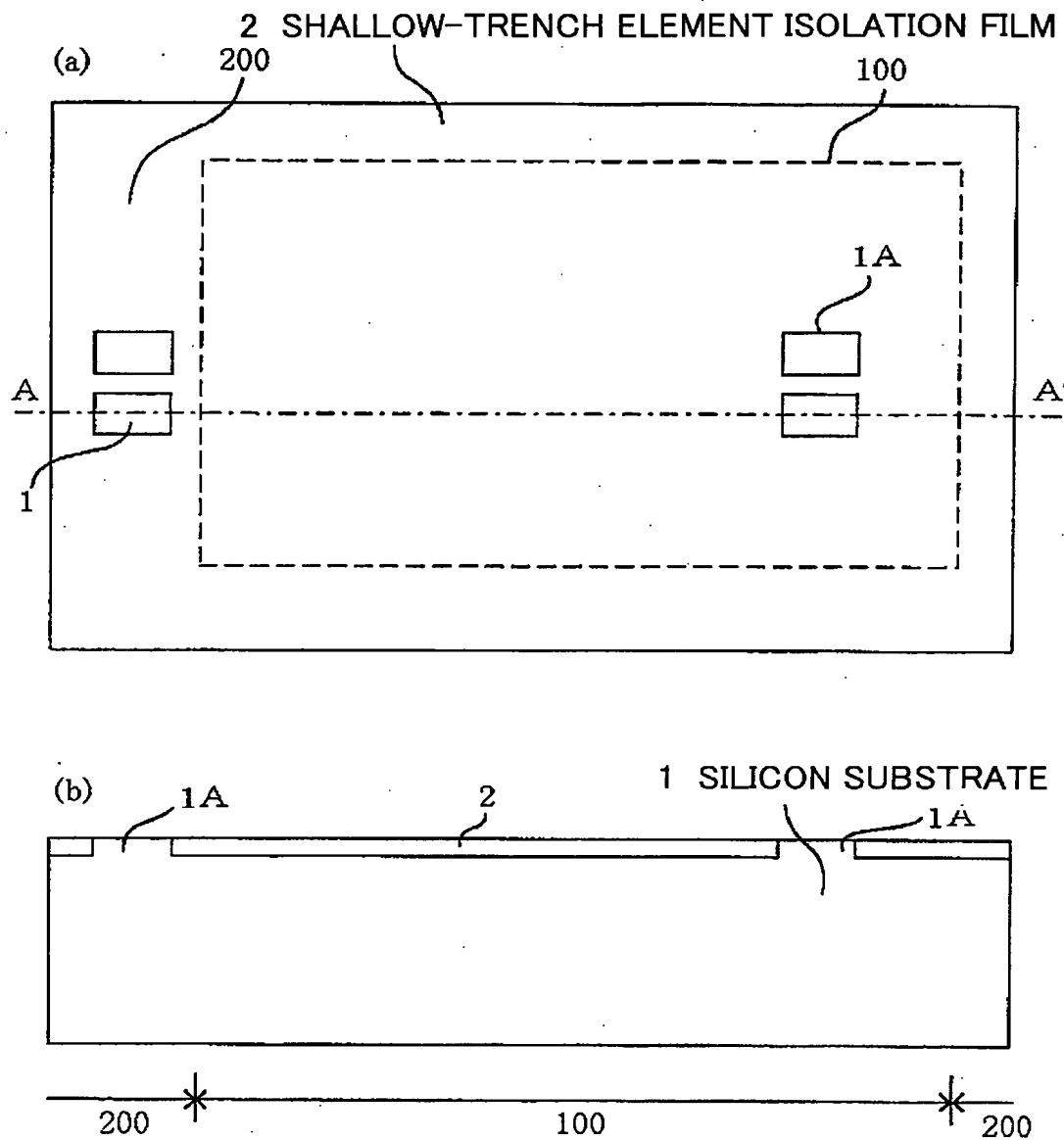


Fig. 10

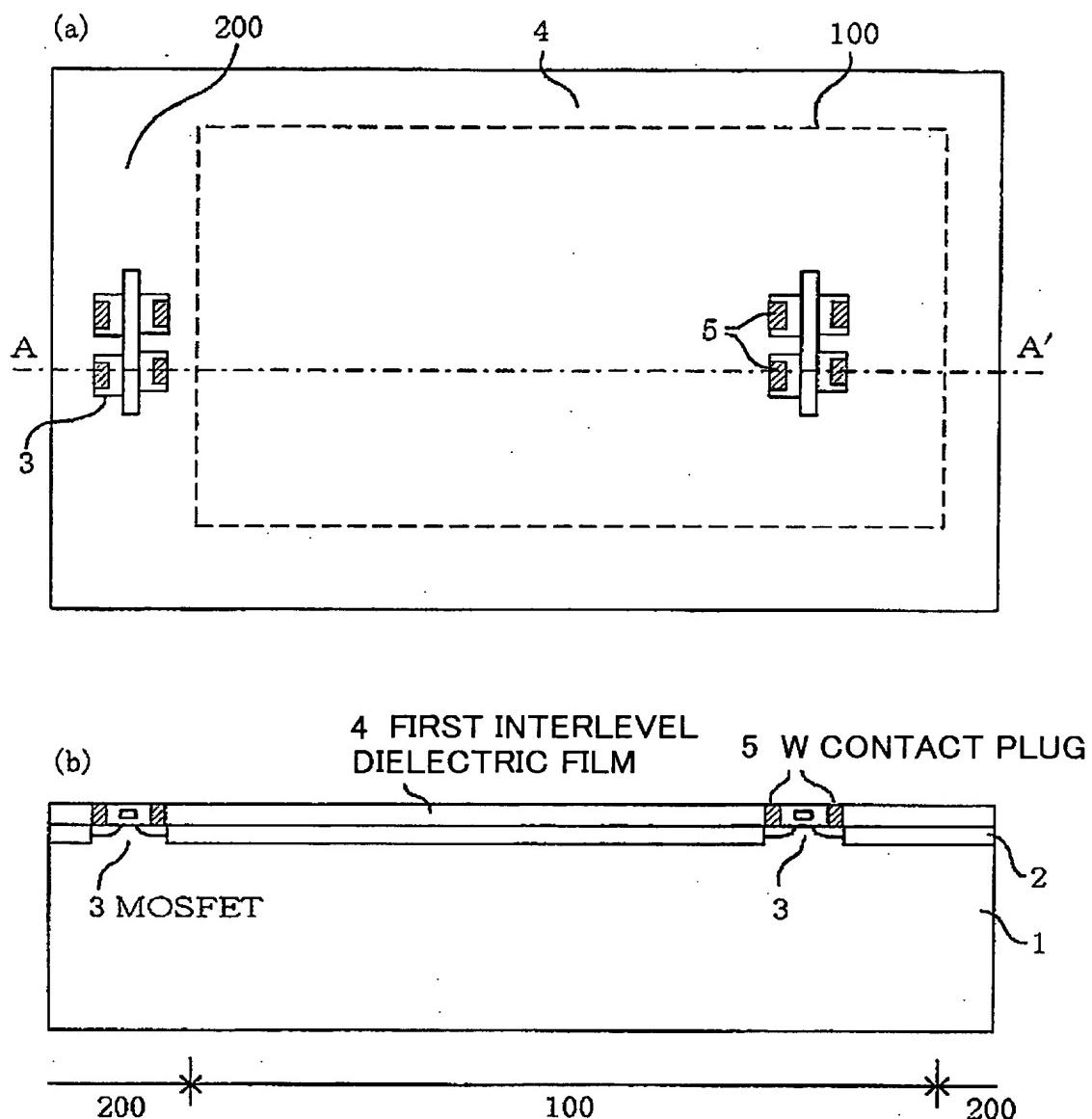


Fig. 11

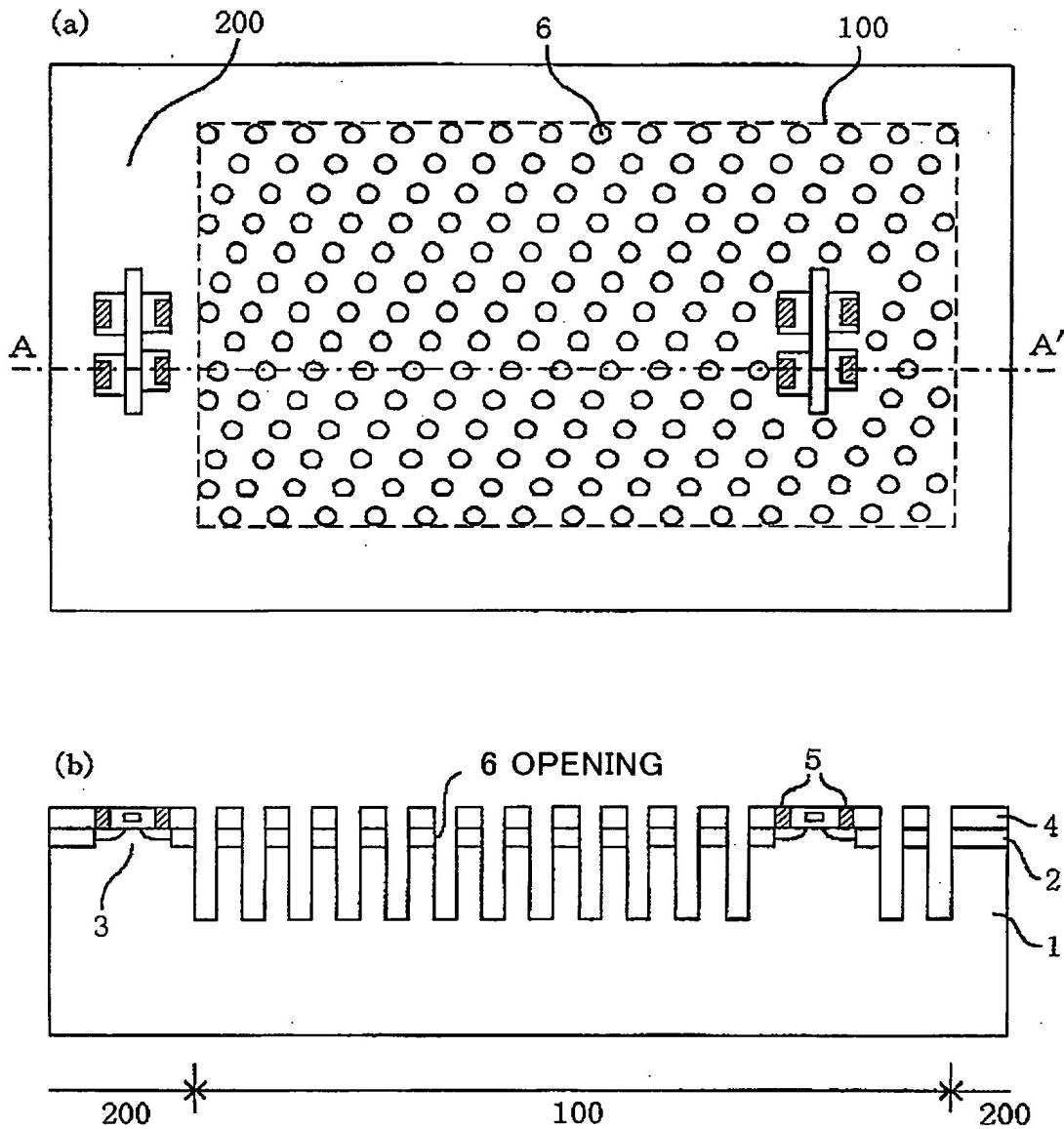


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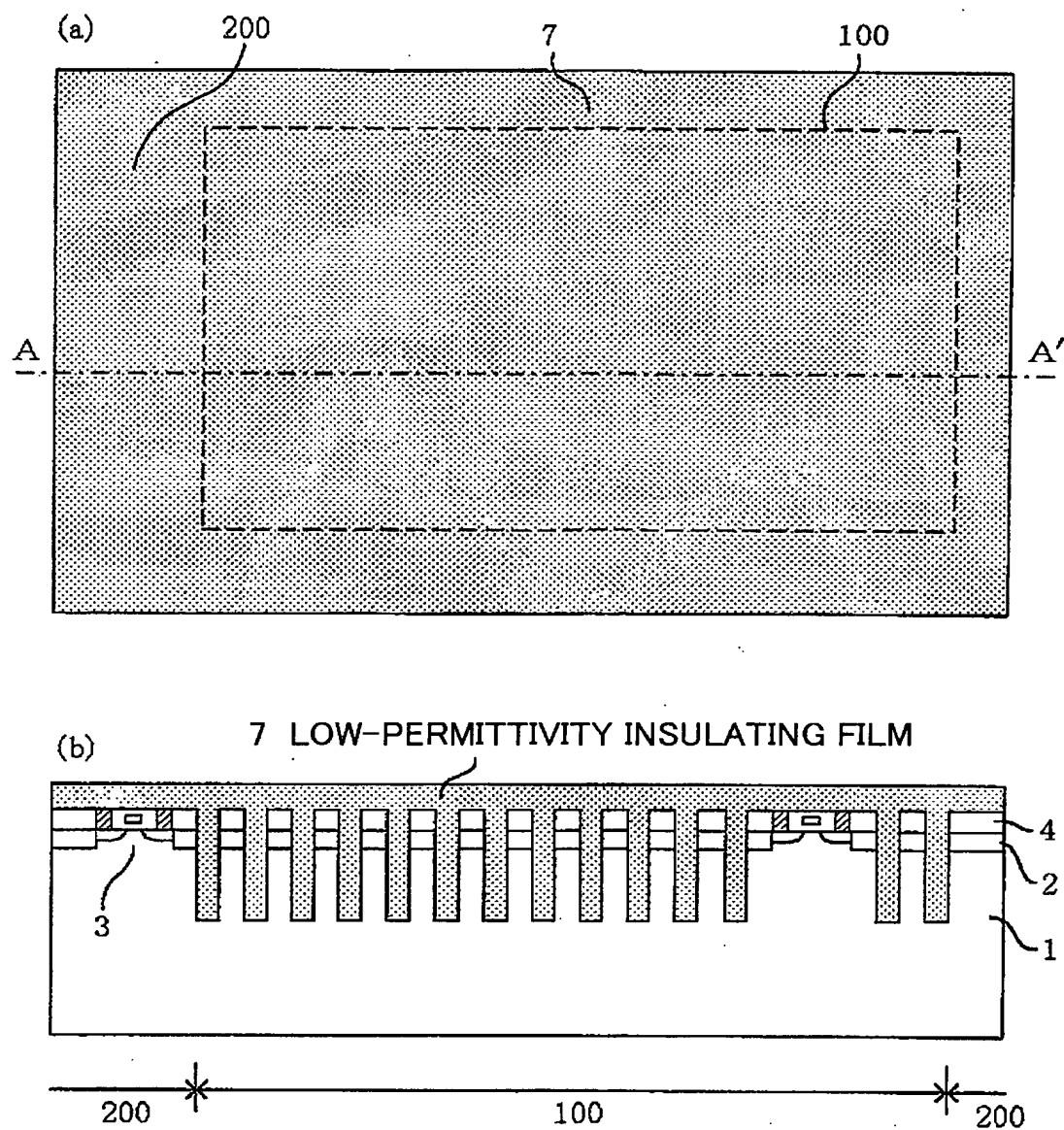


Fig. 13

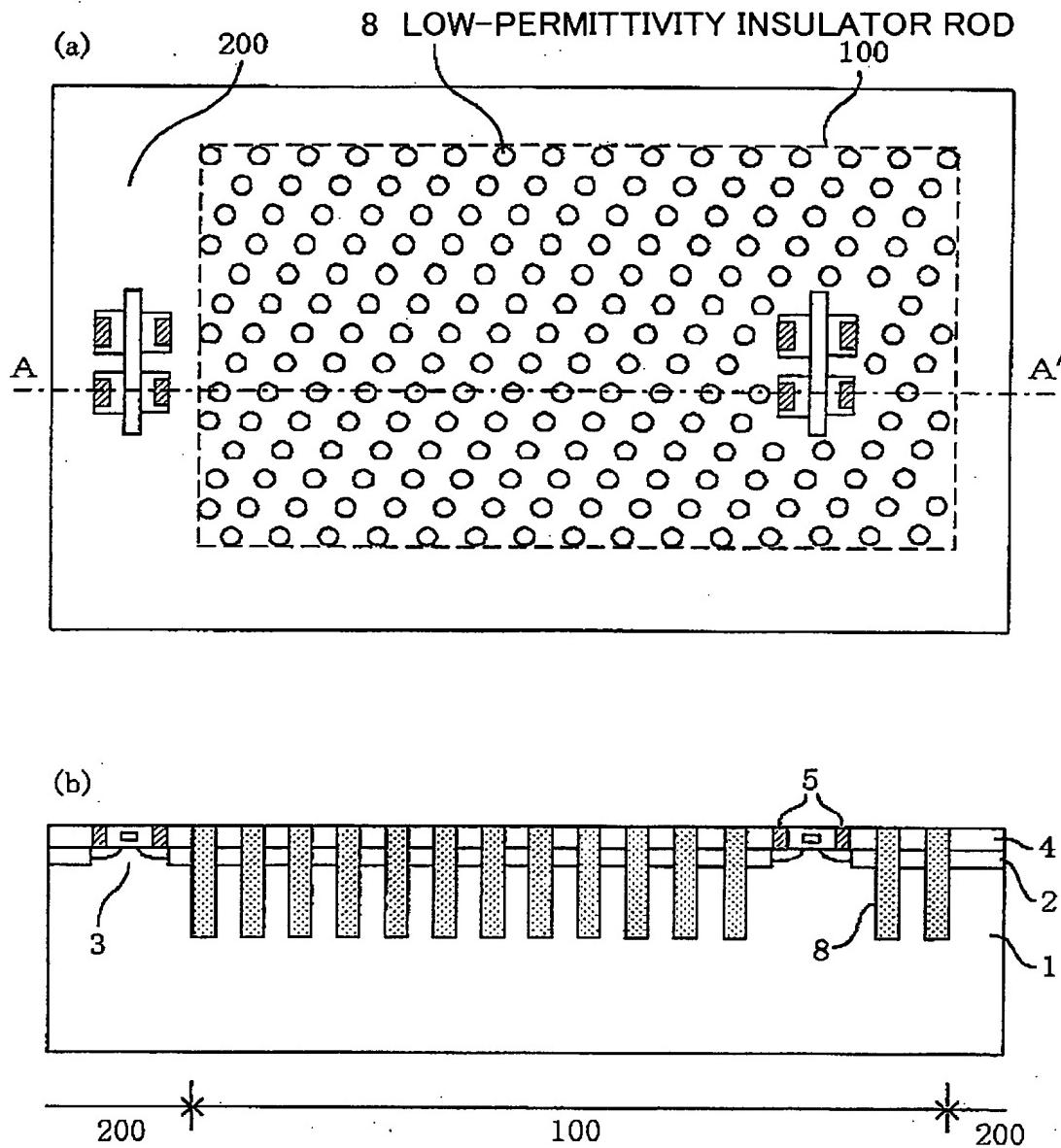


Fig. 14

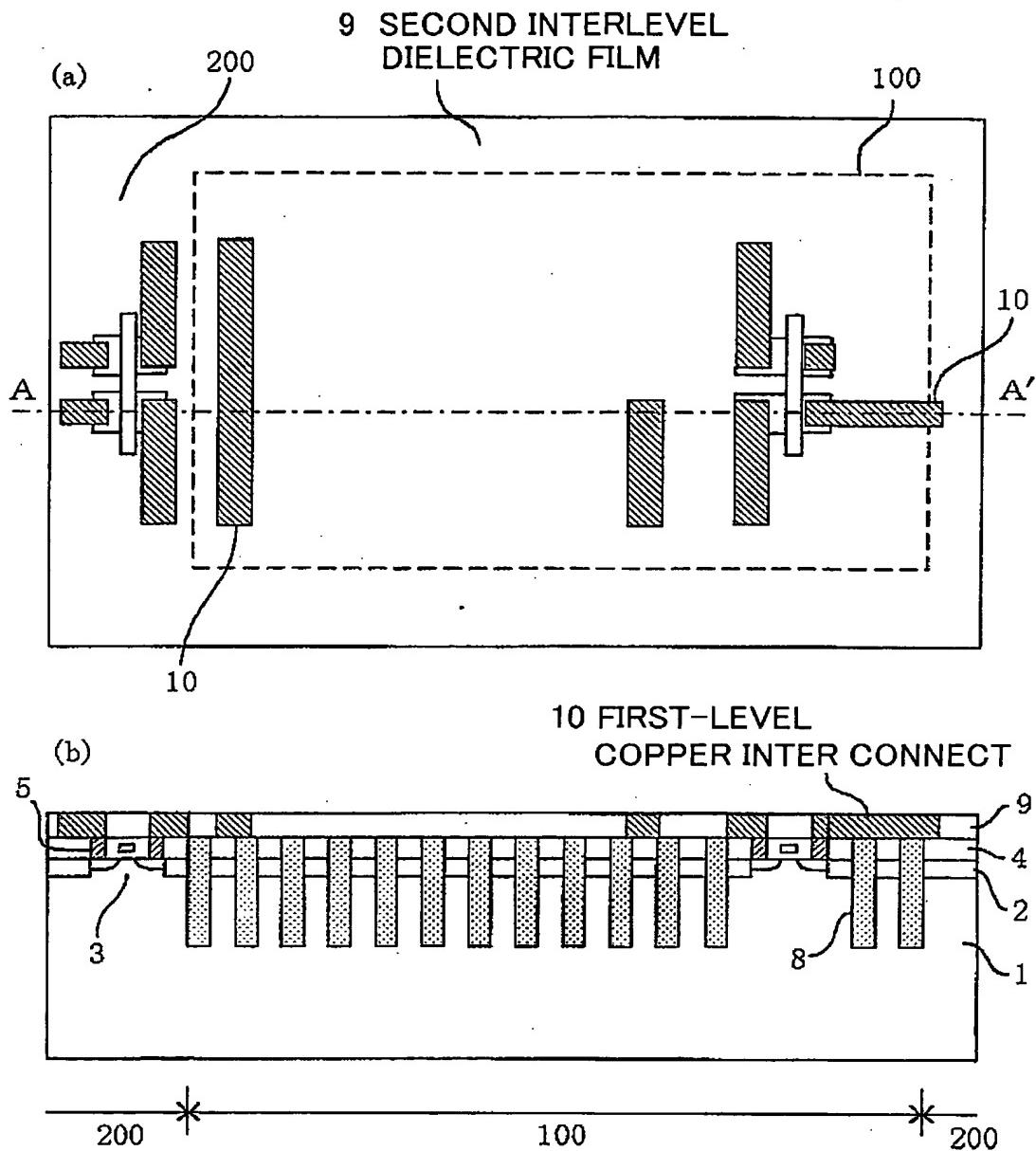
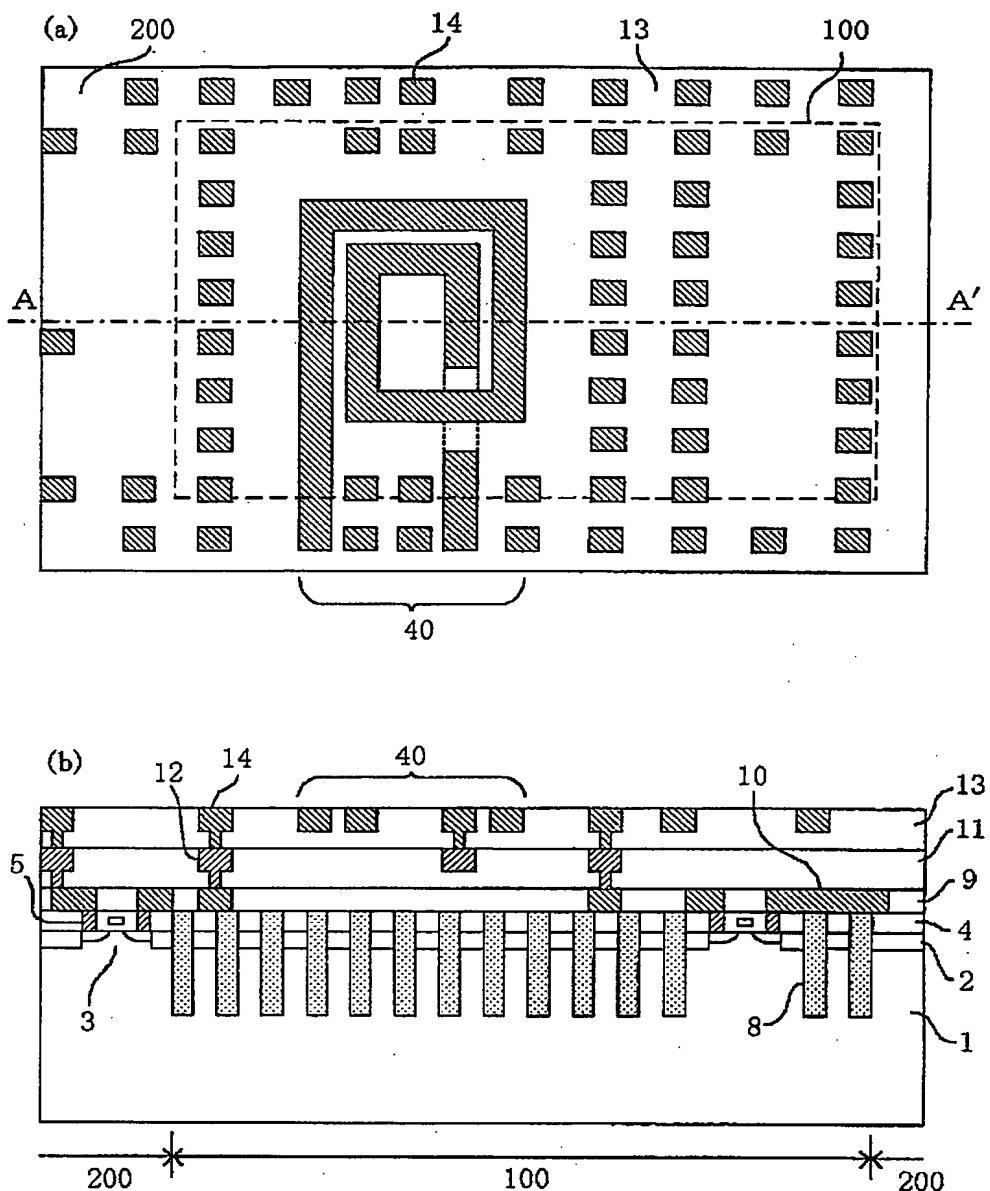
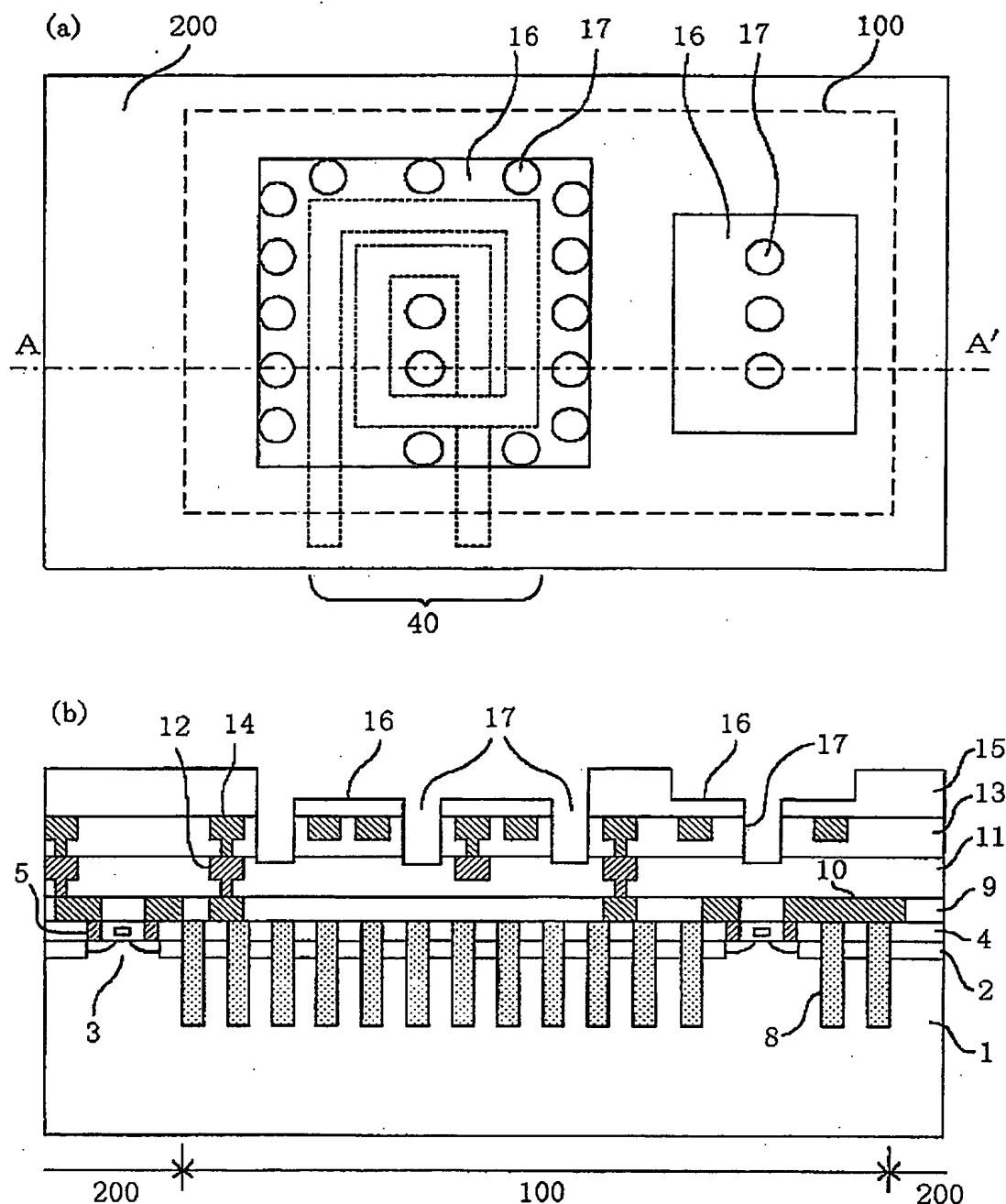


Fig. 15



- 11 THIRD INTERLEVEL DIELECTRIC FILM
- 12 SECOND INTERLEVEL DIELECTRIC FILM
- 13 FOURTH INTERLEVEL DIELECTRIC FILM
- 14 THIRD-LEVEL COPPER INTERCONNECT
- 40 INDUCTOR

Fig. 16



15 FIFTH INTERLEVEL DIELECTRIC FILM
16 DEPRESSION
17 OPENING

Fig. 17

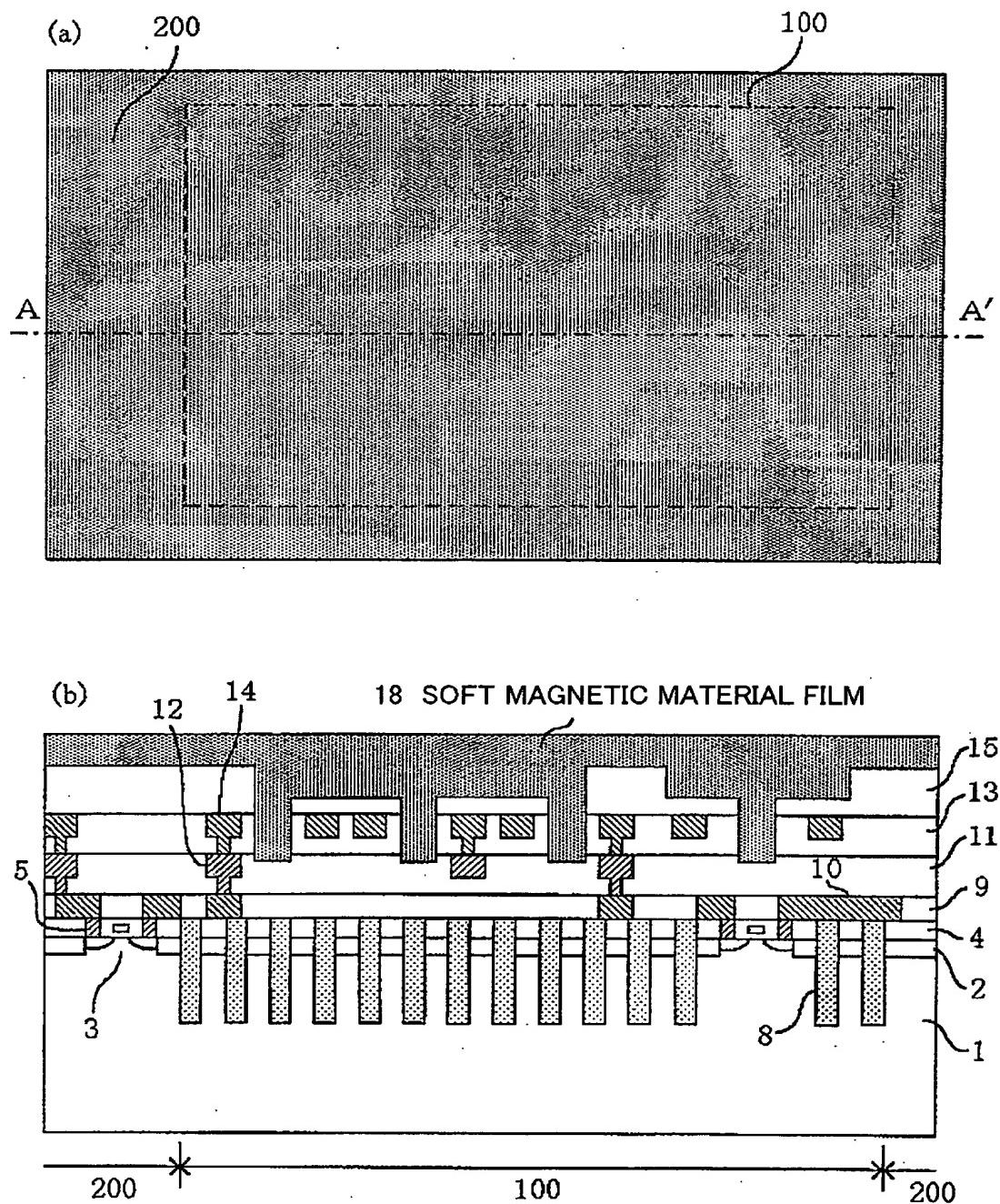


Fig. 18

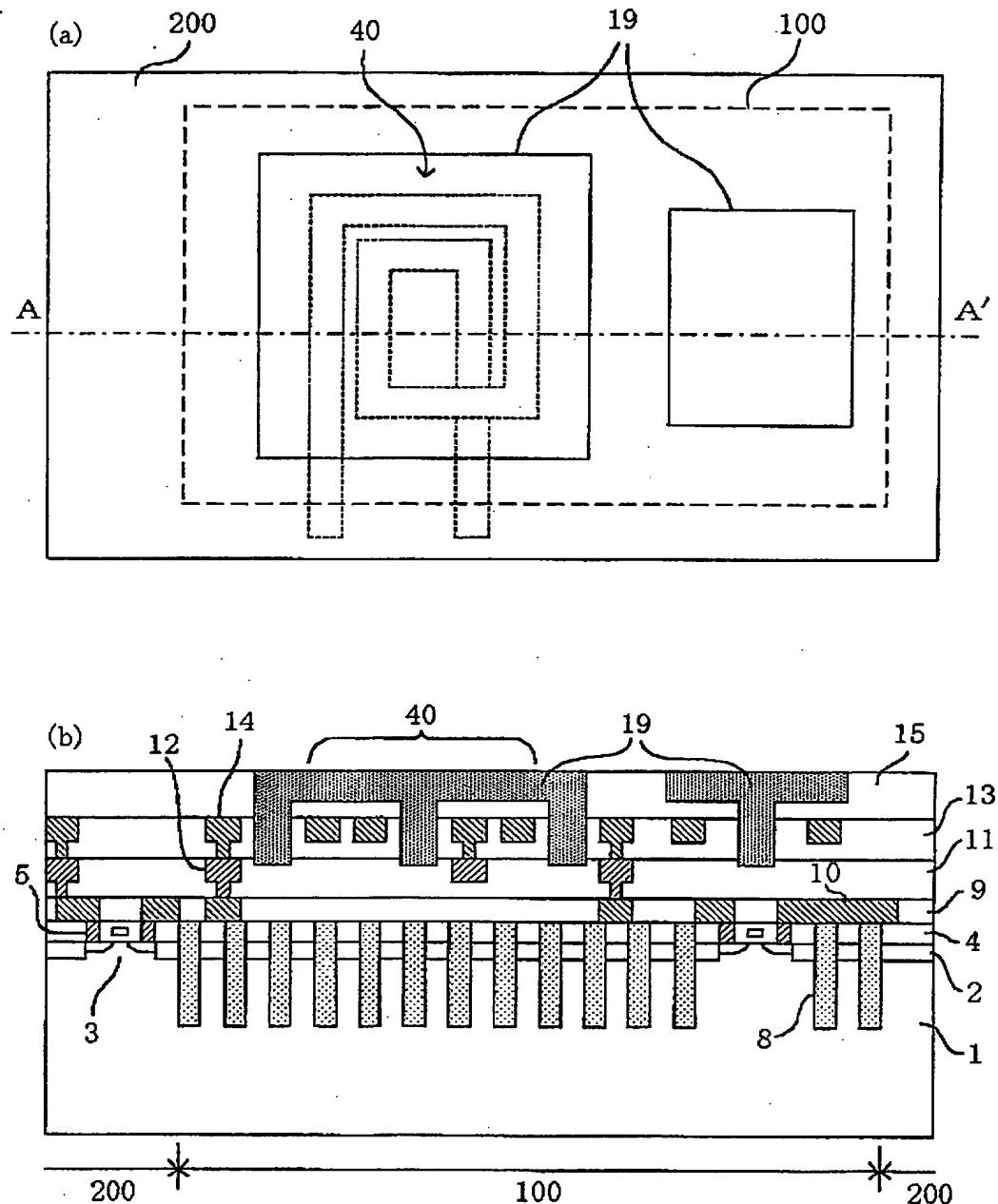


Fig. 19

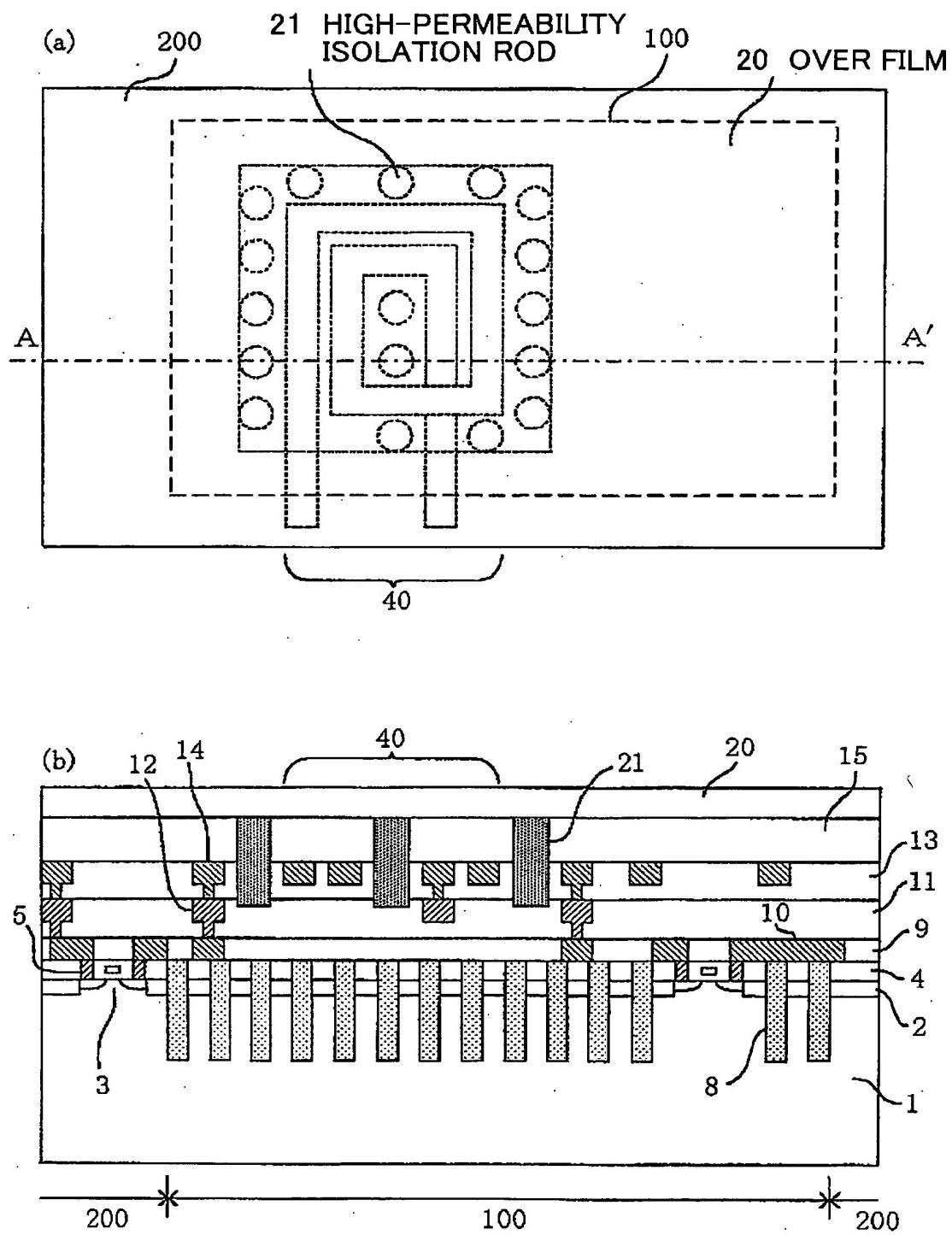
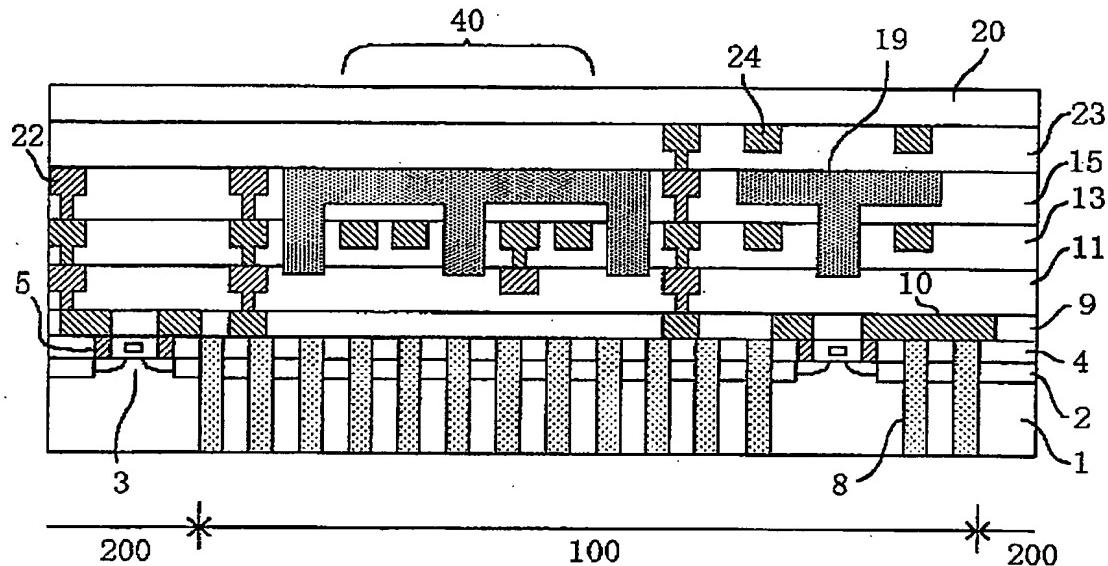
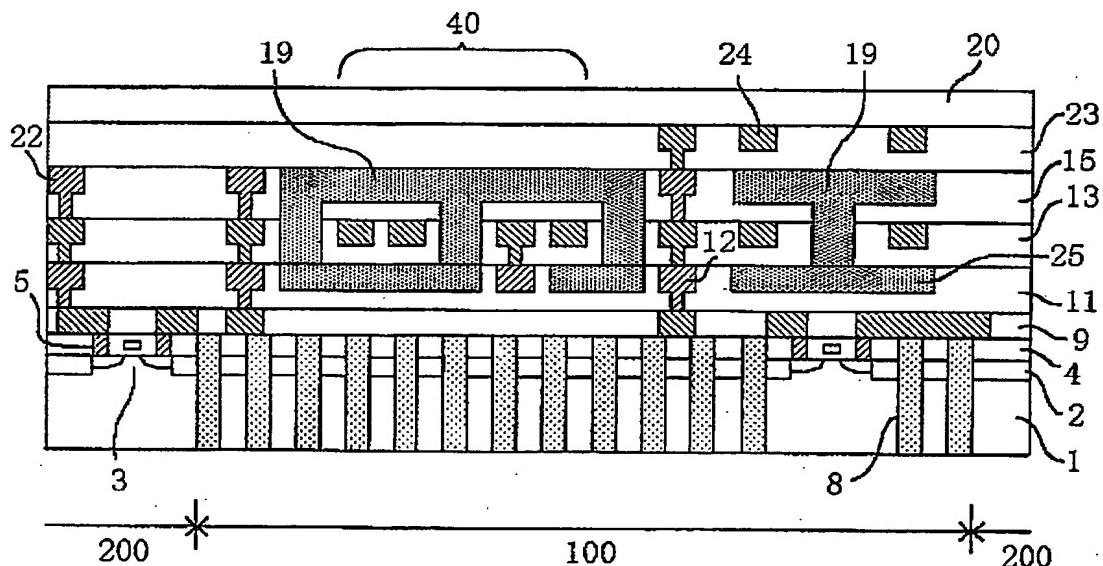


Fig. 20



22 FOURTH-LEVEL COPPER INTERCONNECT
23 SIXTH INTERLEVEL DIELECTRIC FILM

Fig. 21



24 FIFTH-LEVEL COPPER INTERCONNECT
25 HIGH-PERMEABILITY ISOLATION PLANE

Fig. 22

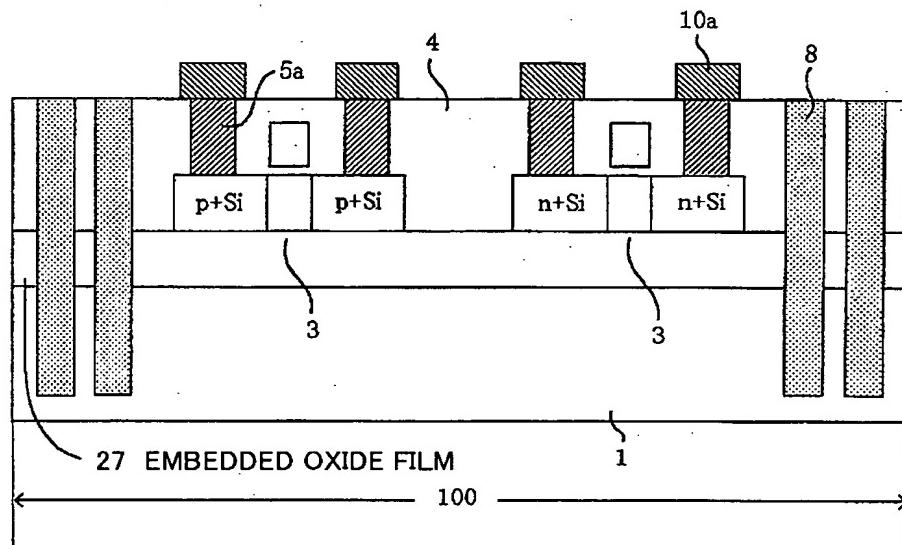
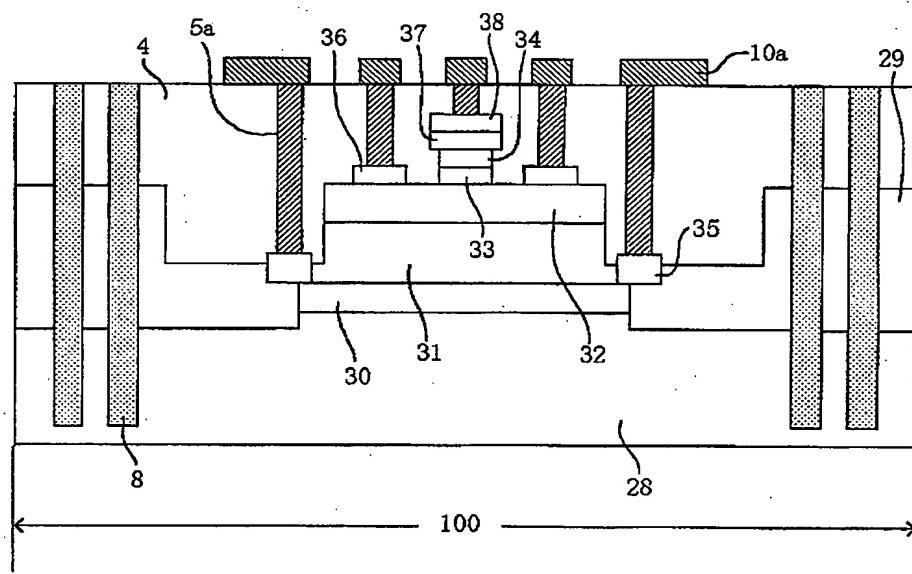


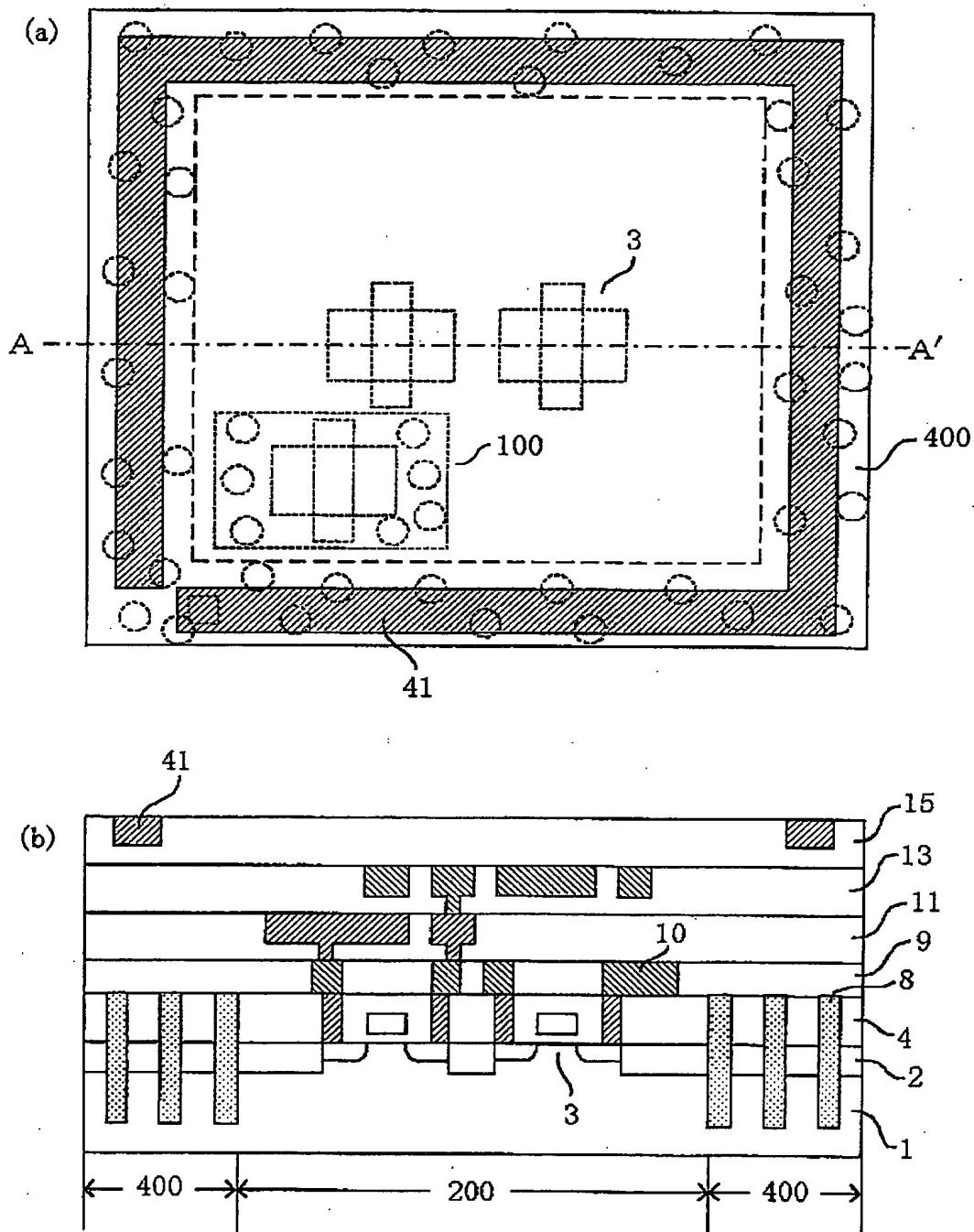
Fig. 23



28 SEMI-INSULATING GAAS SUBSTRATE
 29 H⁺-DOPED HIGH RESISTANCE AREA
 30 N⁺-GAAS LAYER
 31 N⁻-GAAS LAYER
 32 P⁺-GAAS LAYER

33 N -ALGAAS LAYER
 34 N-INGAAS LAYER
 35 AU/NI/AUGE LAYER
 36, 38 AU/PT LAYER
 37 WSI LAYER

Fig. 24



41 ON-CHIP ANTENNA INTERCONNECT
400 PERIPHERAL HIGH-RESISTANCE AREA

Fig. 25

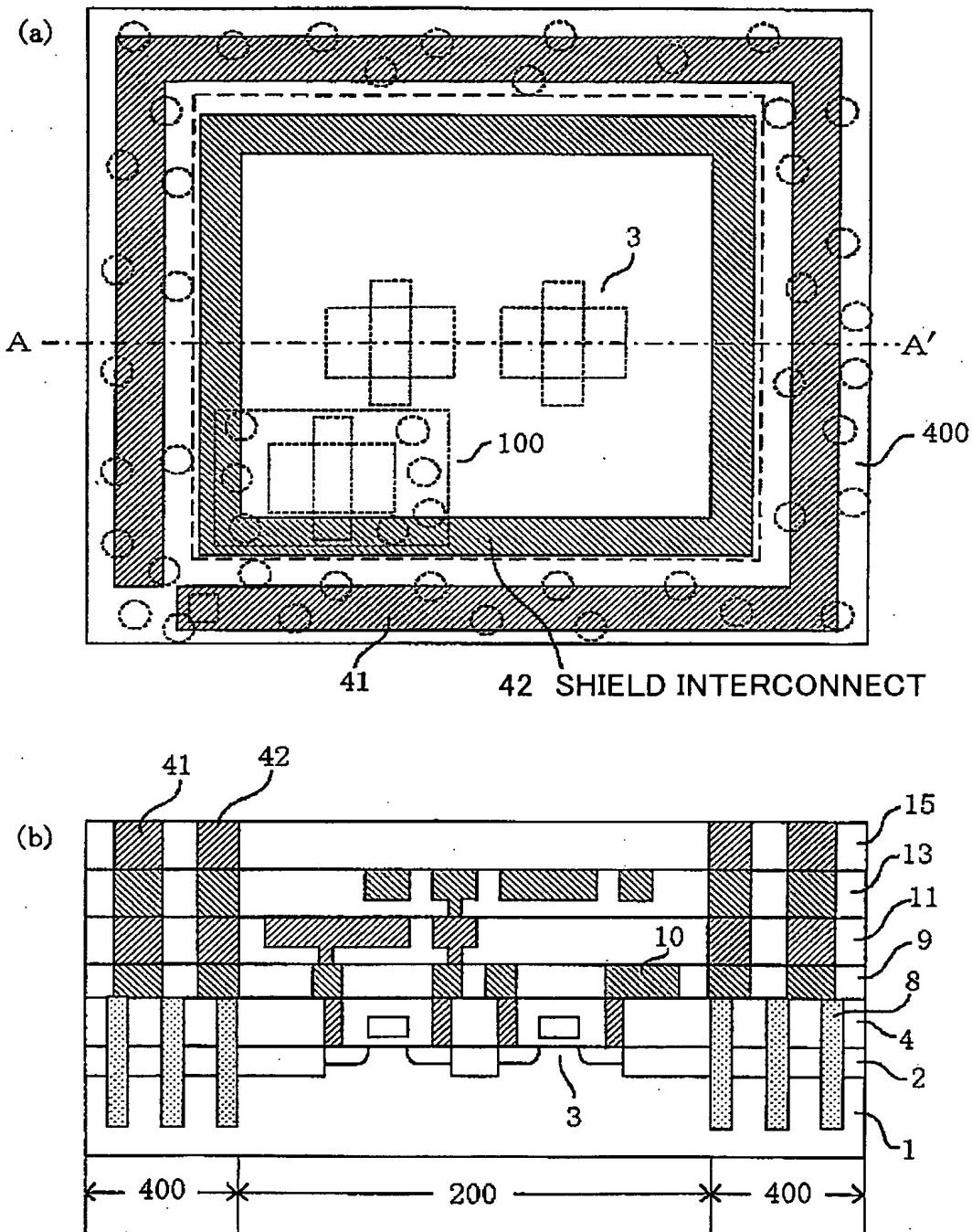
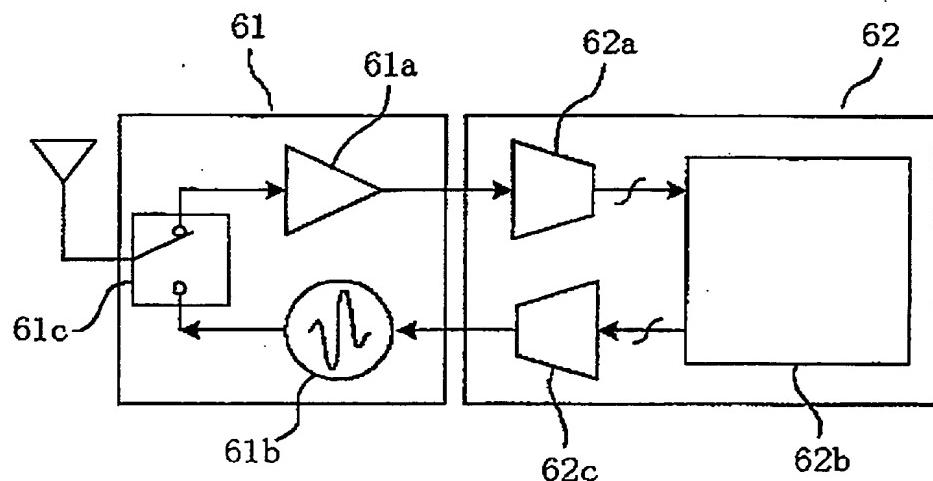


Fig. 26



- 61 RF COMMUNICATION CIRCUIT AREA
- 61A LNA
- 61B TRANSMISSION SIGNAL GENERATING CIRCUIT
- 61C SWITCH CIRCUIT
- 62 DIGITAL BASEBAND
- 62A A/D CIRCUIT
- 62B DIGITAL SIGNAL PROCESSING CIRCUIT
- 63C D/A CIRCUIT

Fig. 27

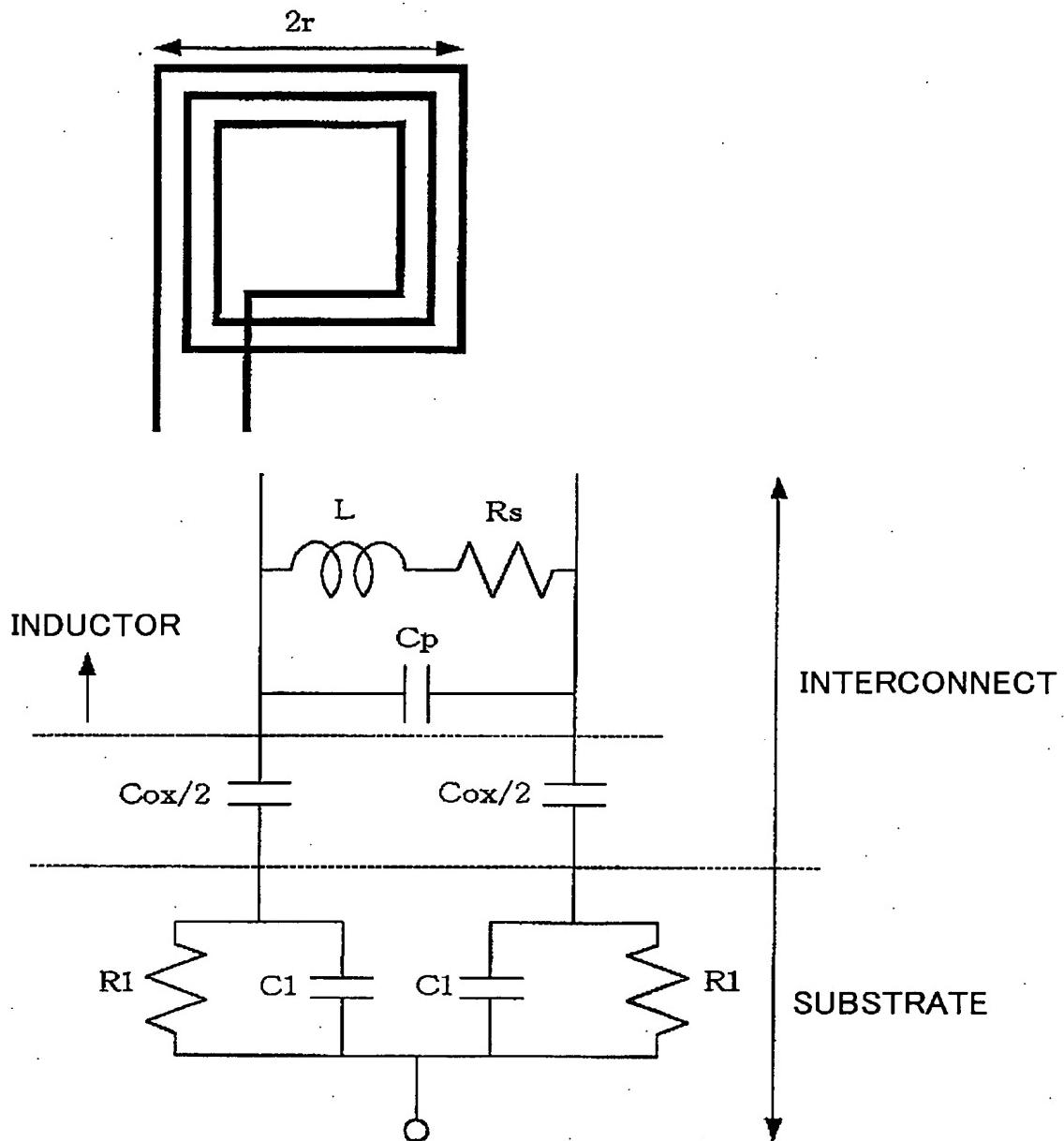


Fig. 28

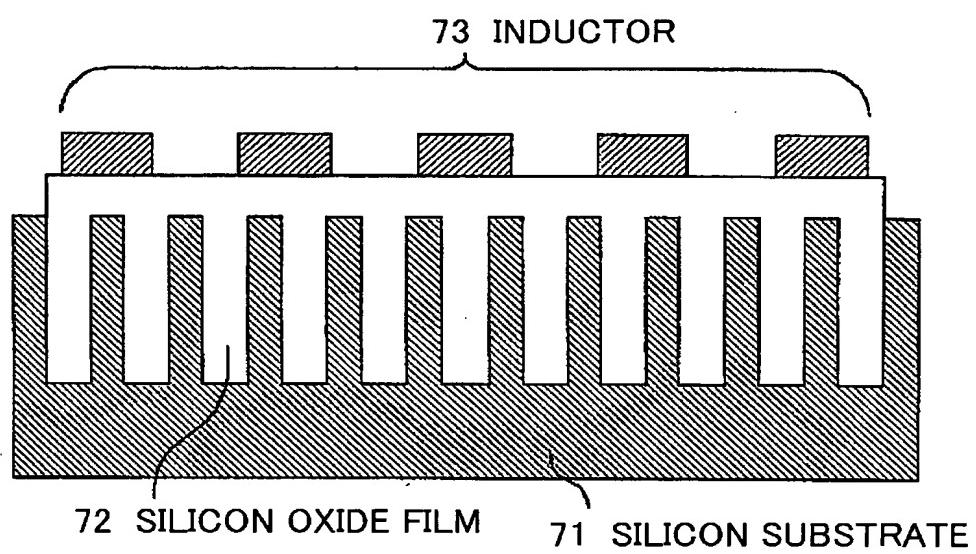


Fig. 29

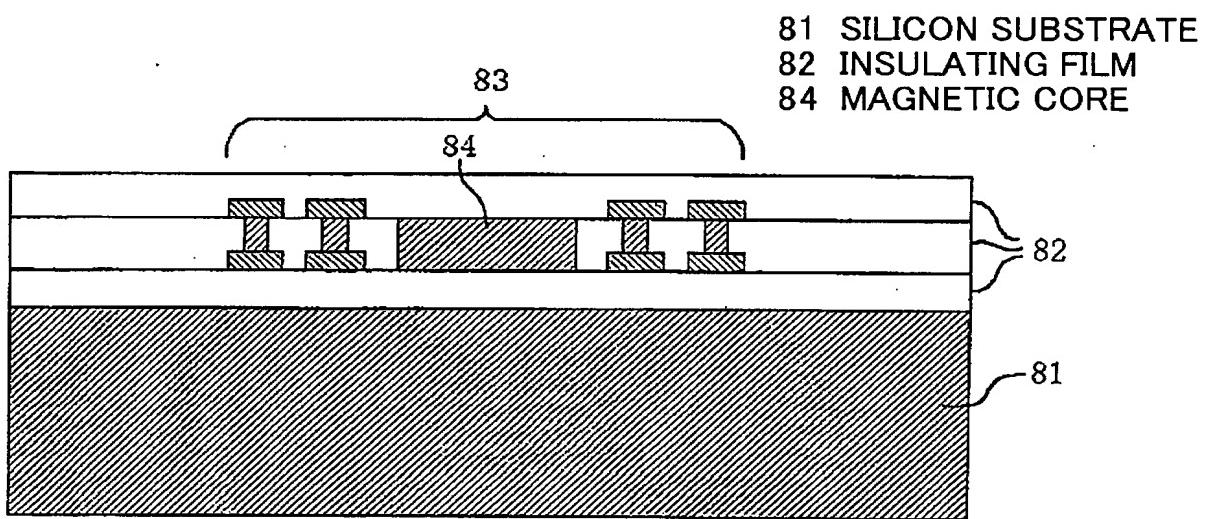
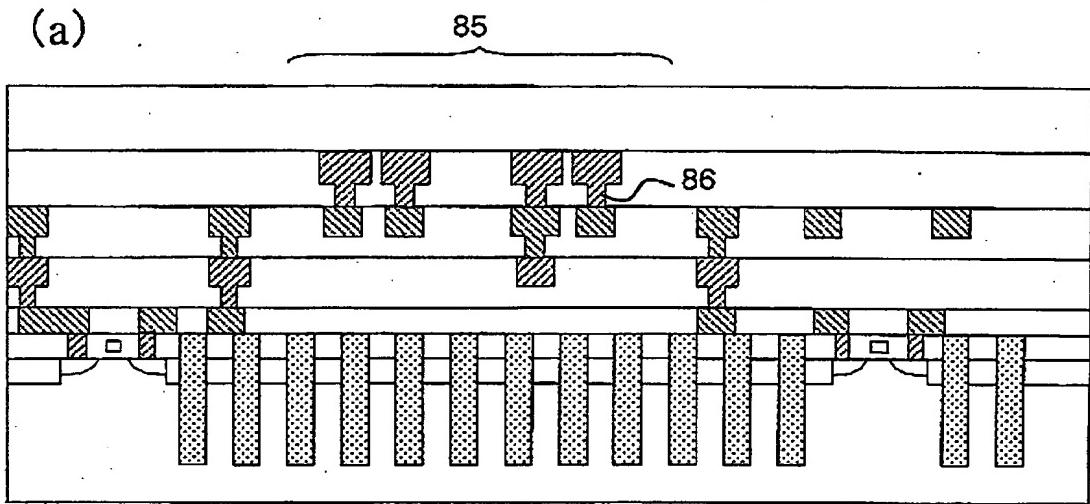


Fig. 30

(a)



(b)

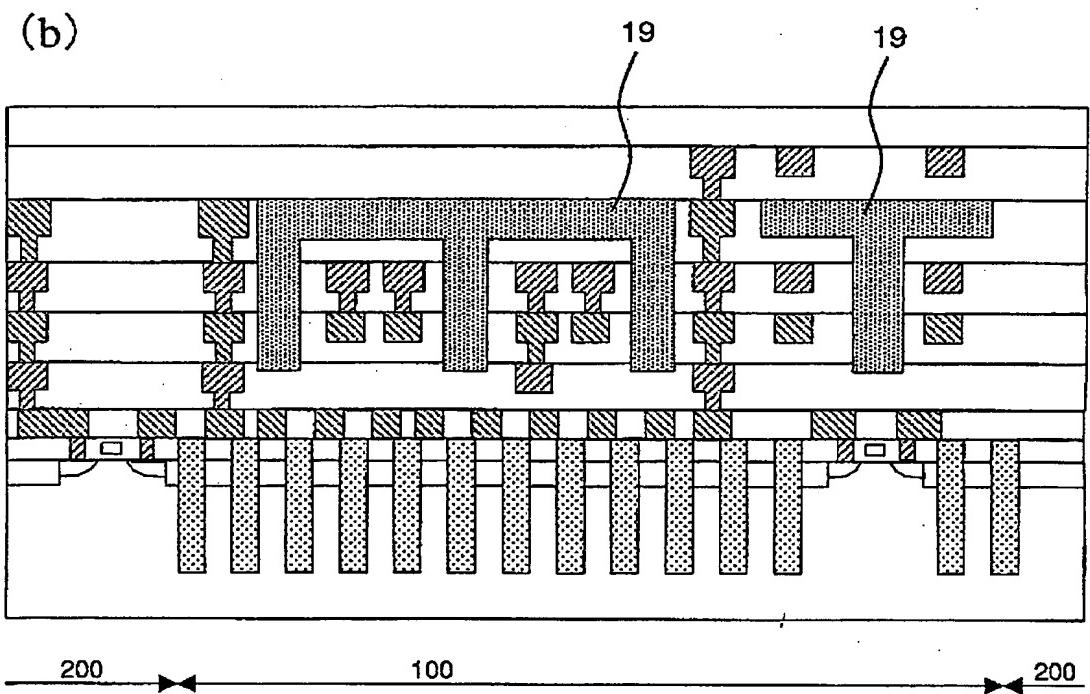


Fig. 31

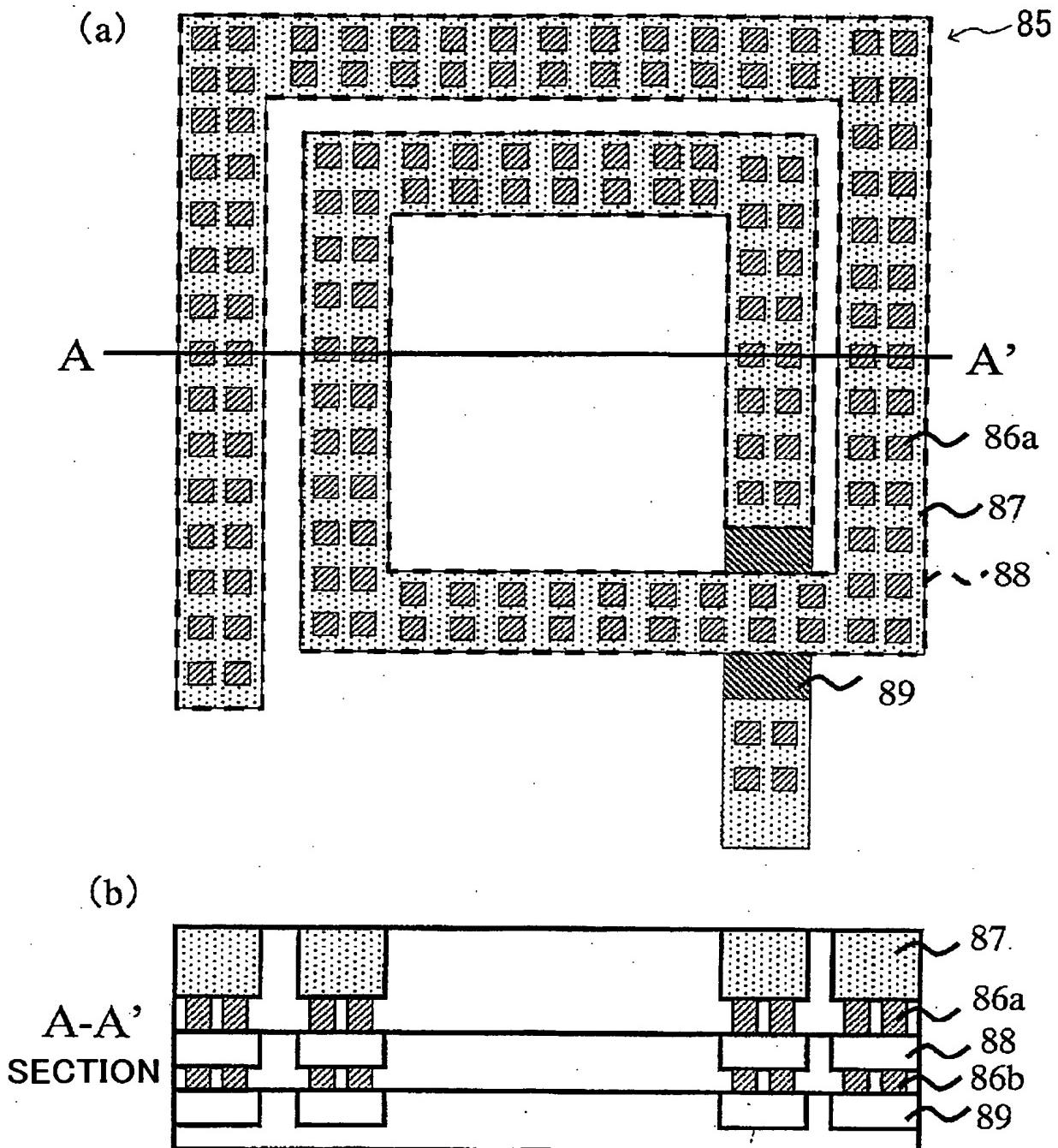
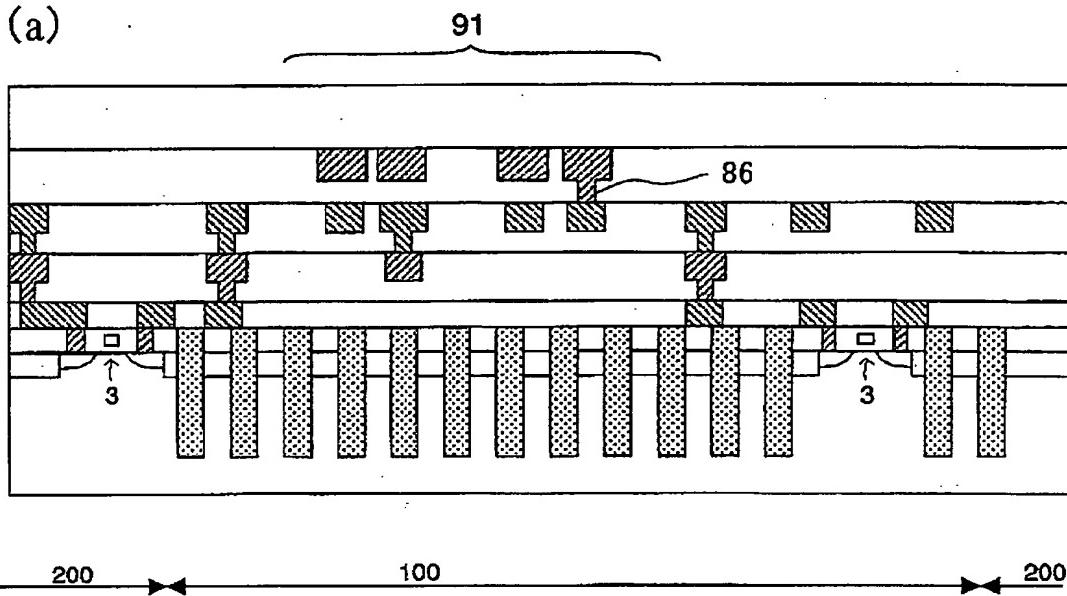


Fig. 32

(a)



(b)

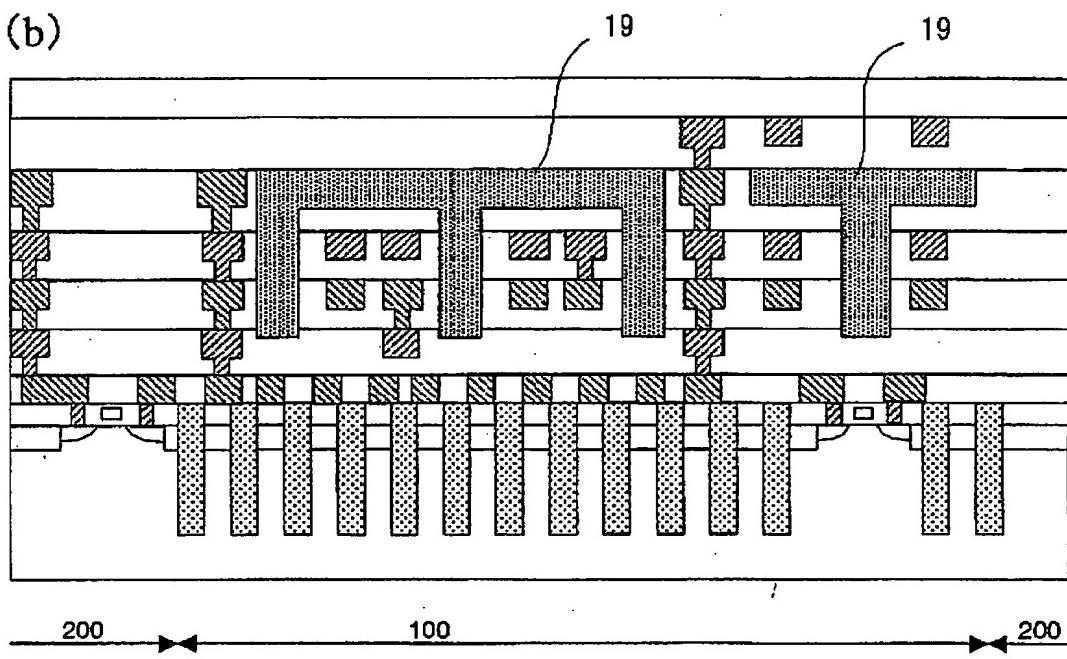


Fig. 33

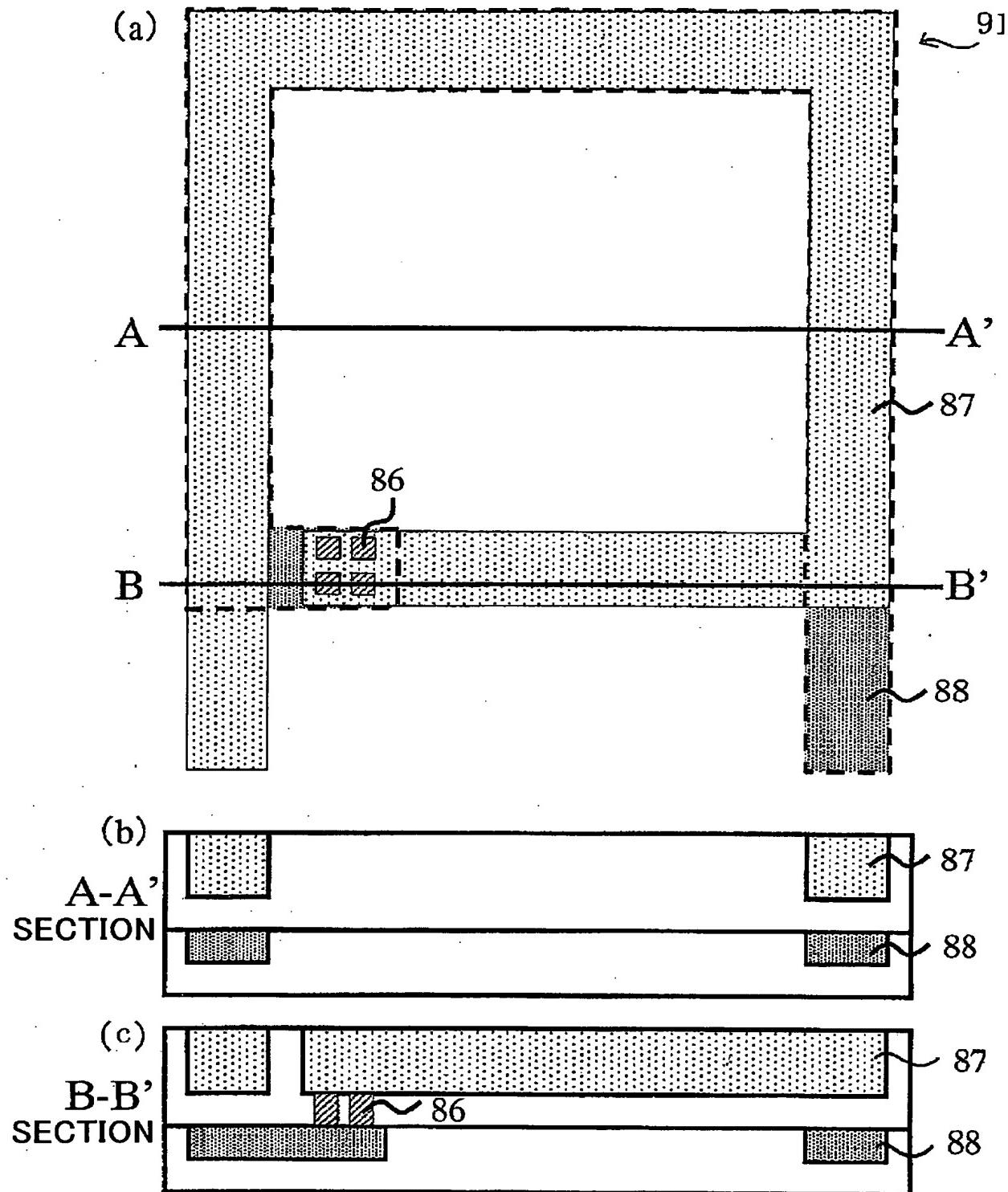
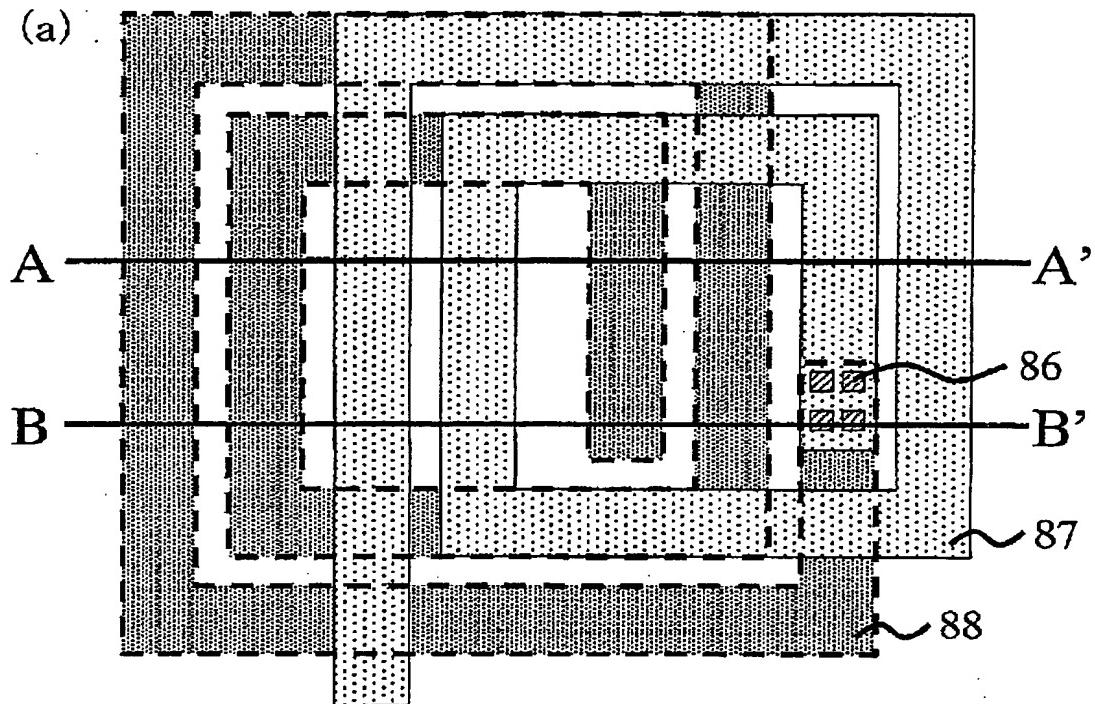
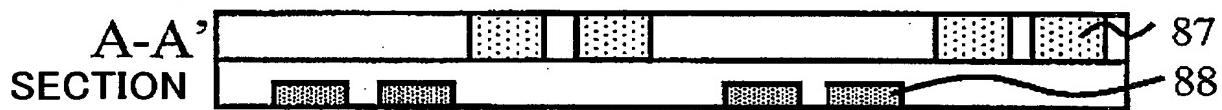


Fig. 34

(a)



(b)



(c)

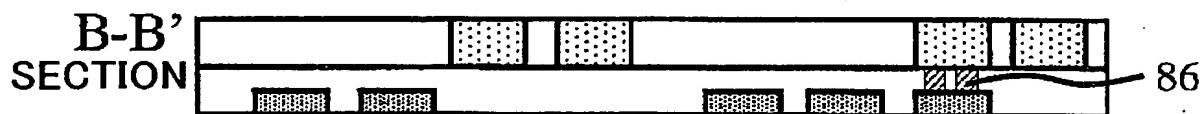


Fig. 35

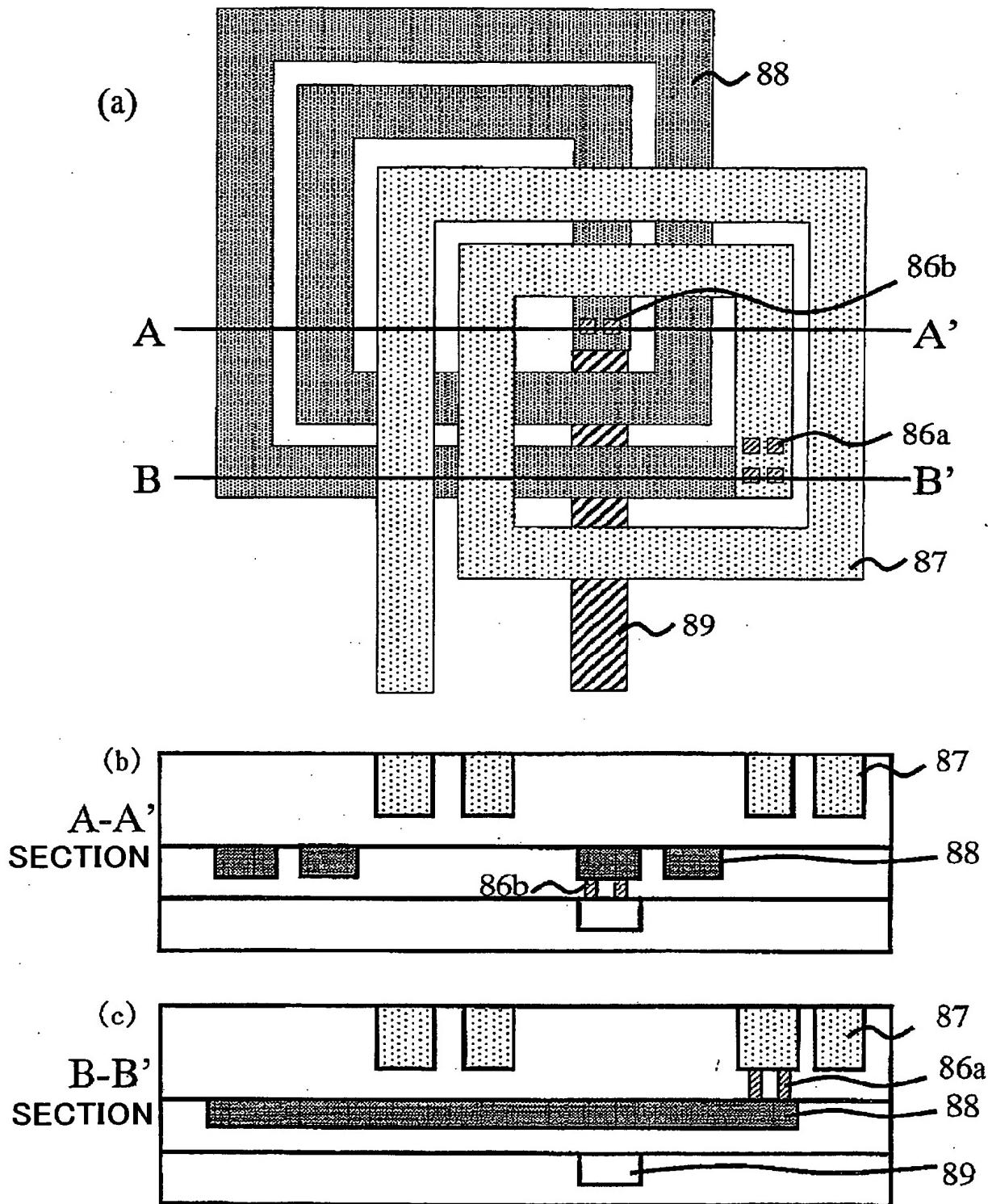
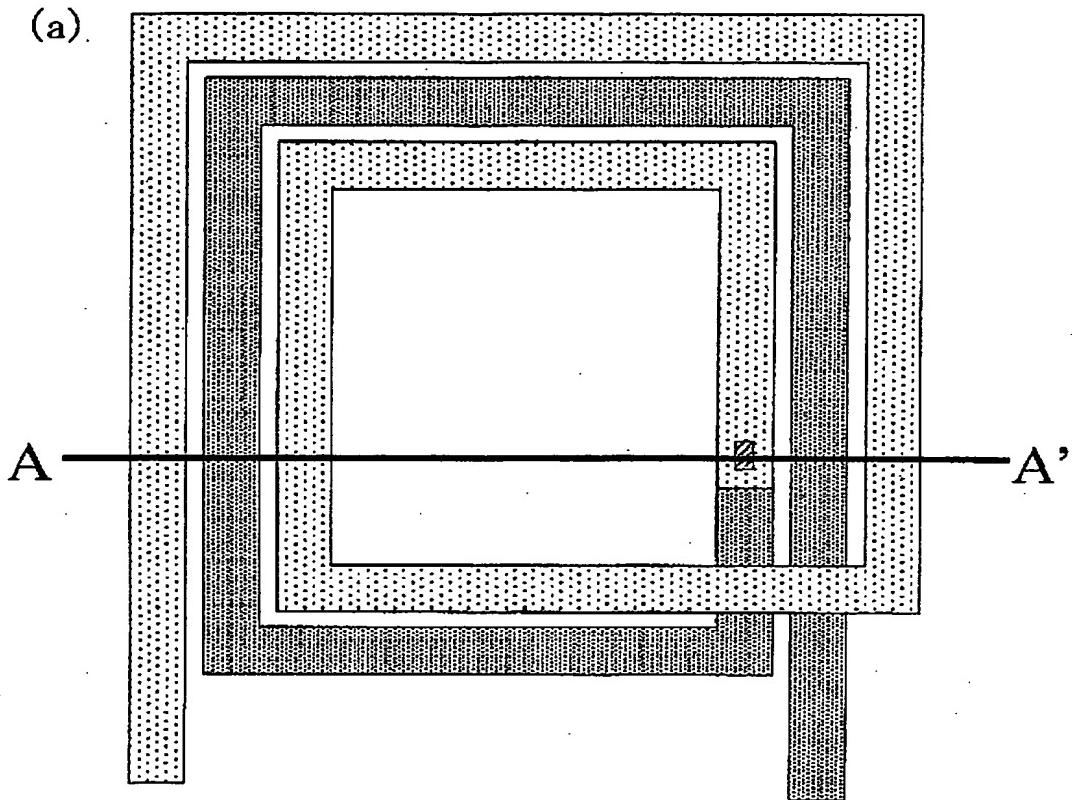


Fig. 36

(a)



(b)

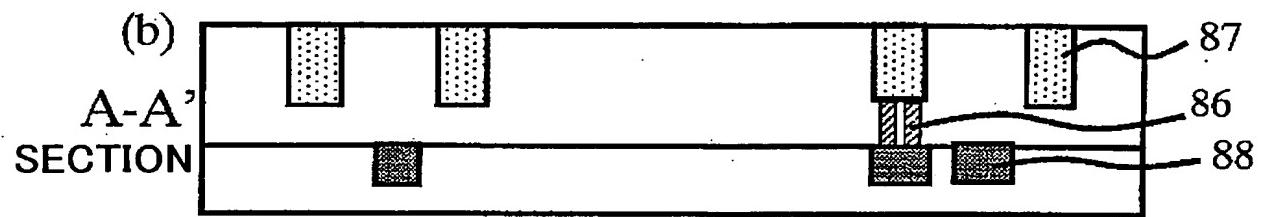


Fig. 37

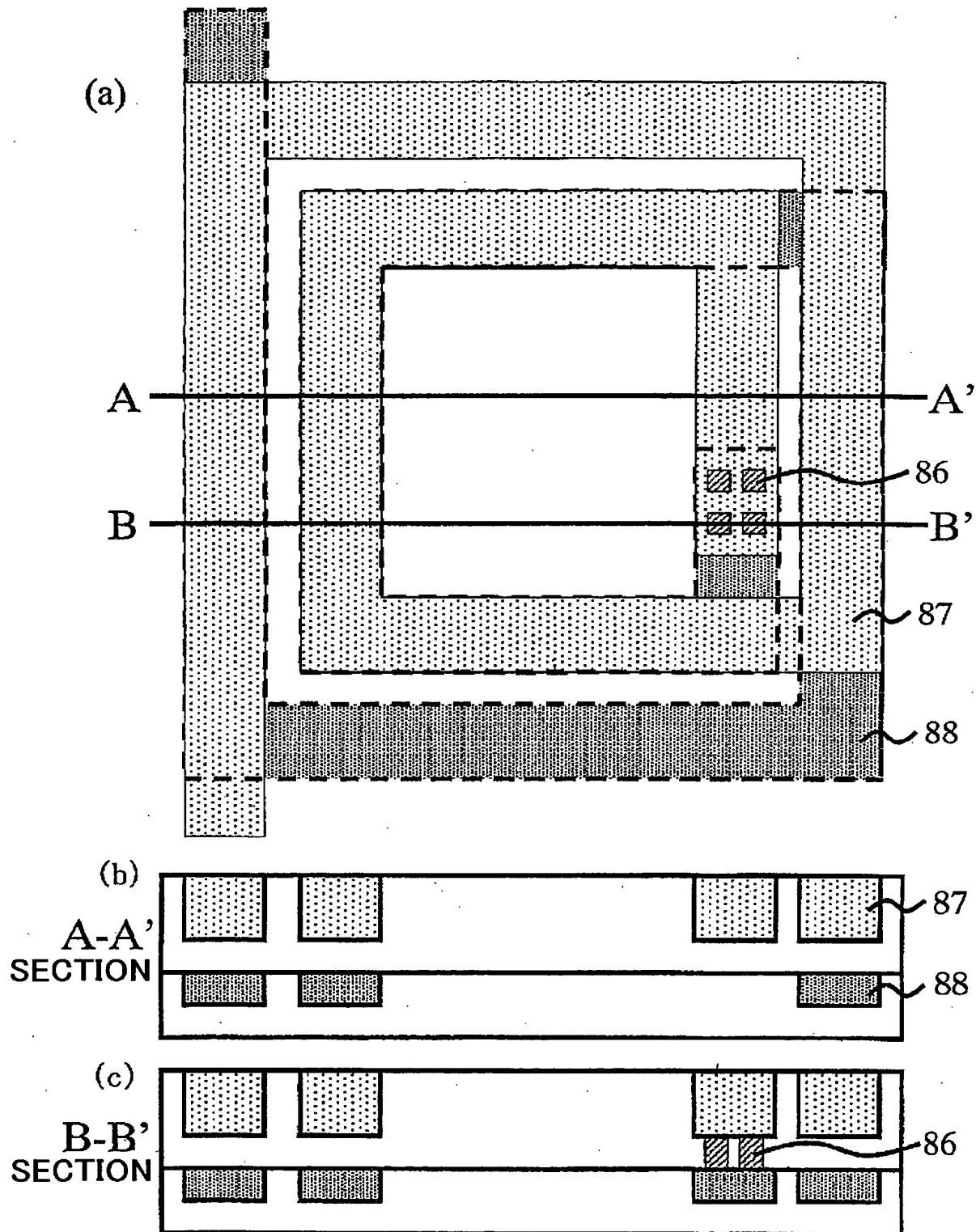


Fig. 38

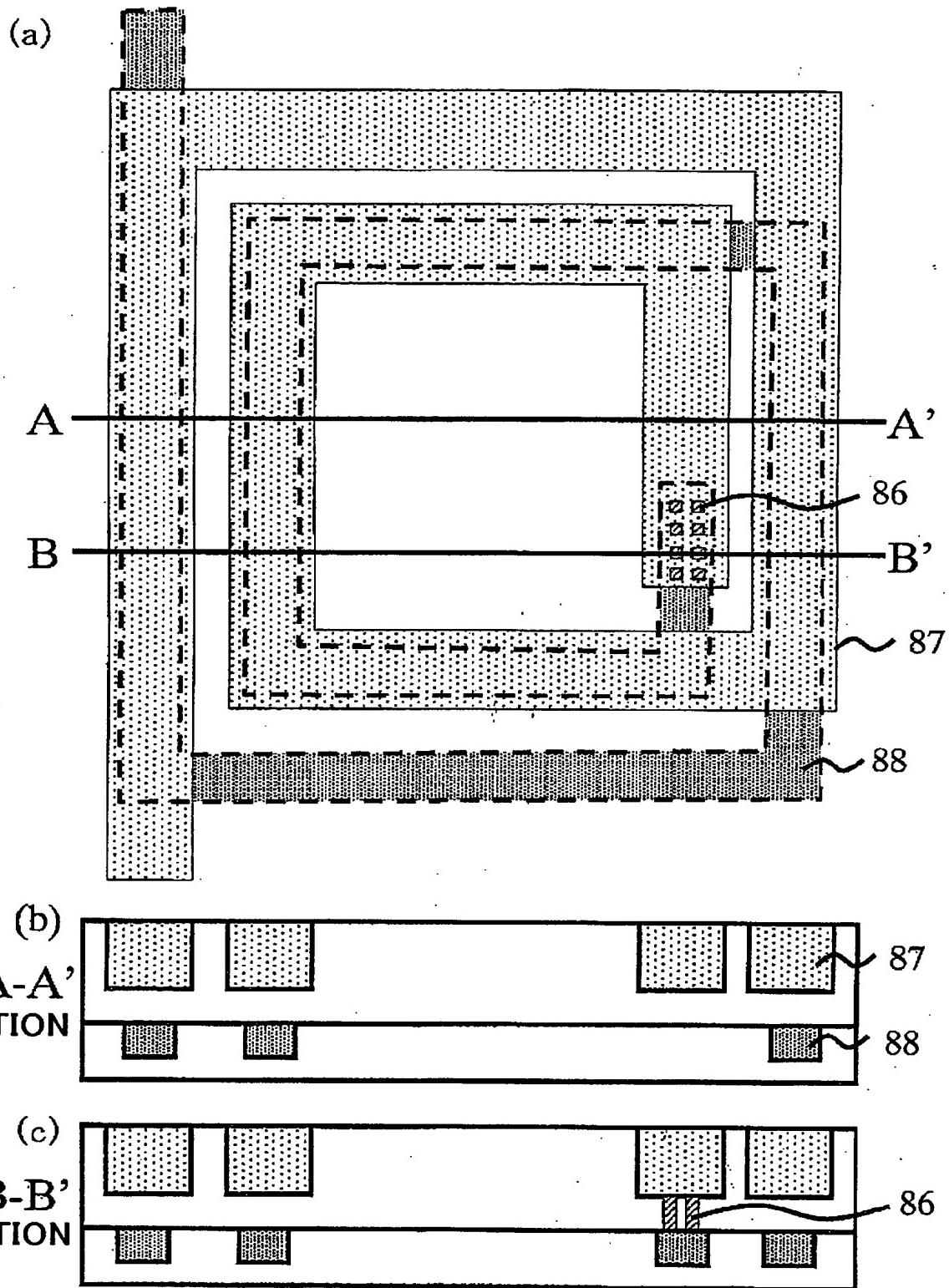


Fig. 39

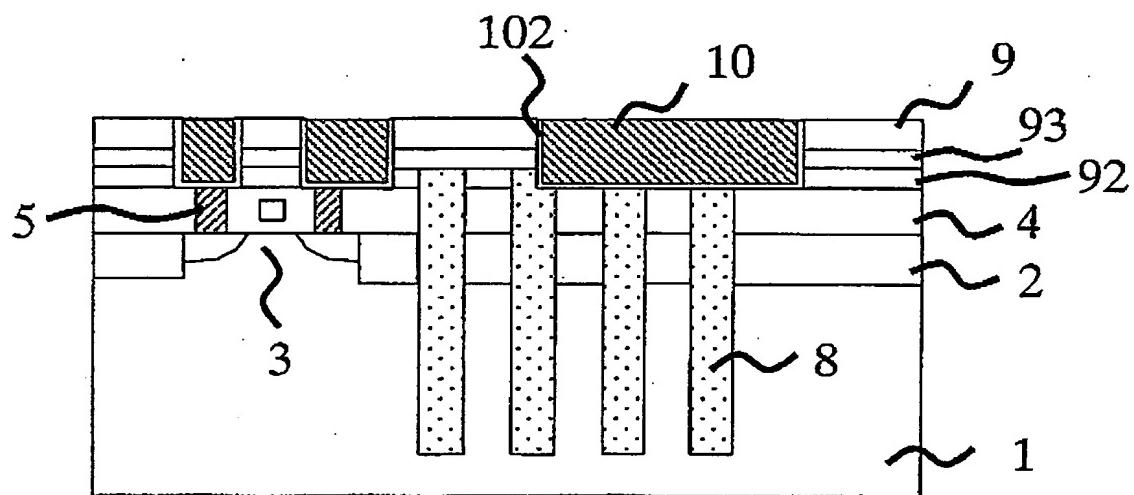


Fig. 40

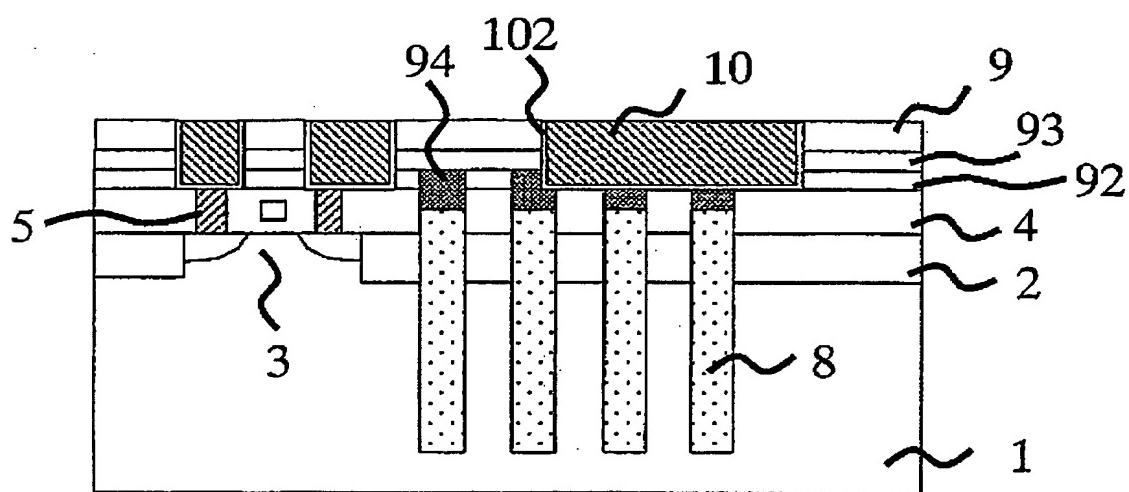


Fig. 41

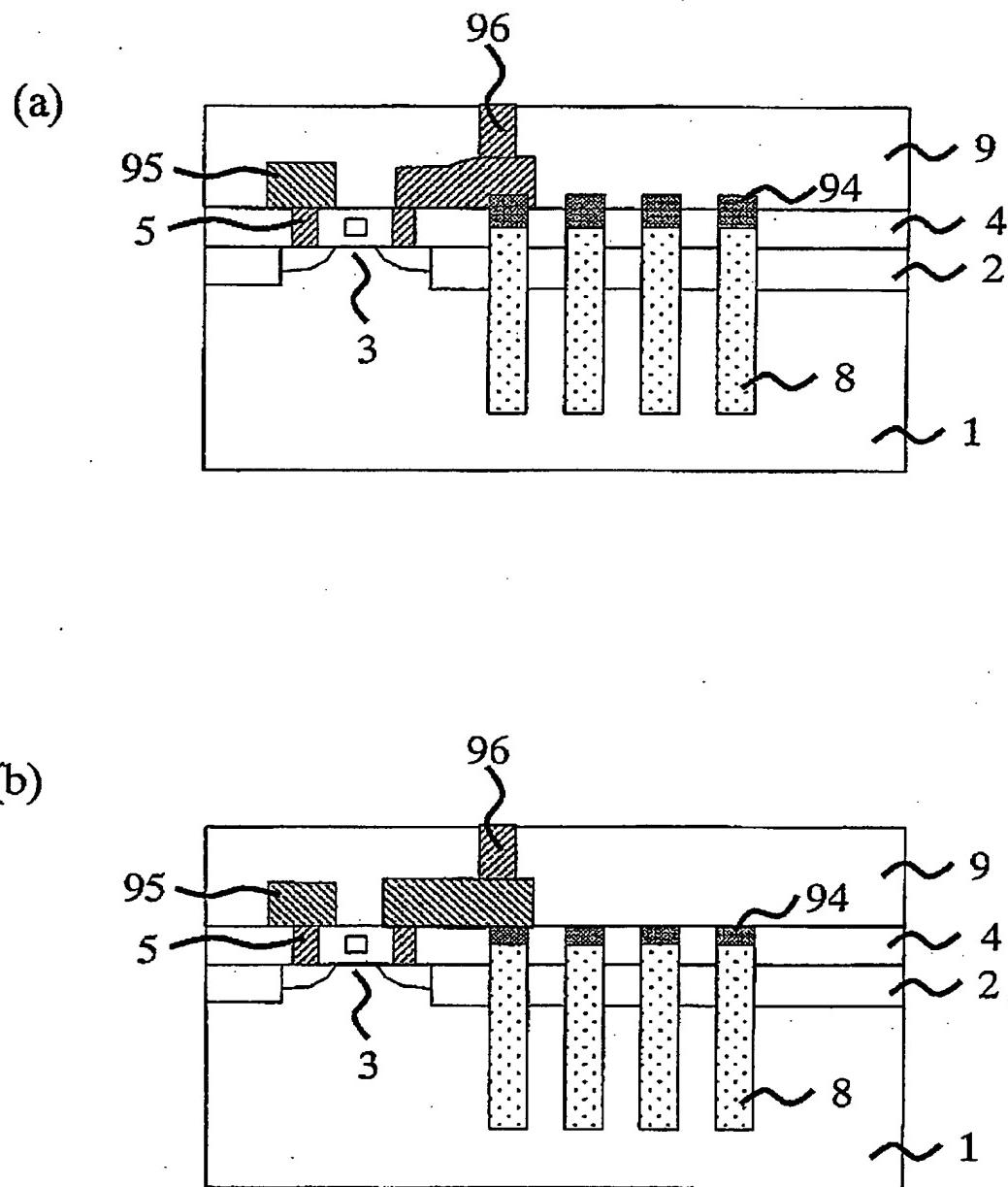


Fig. 42

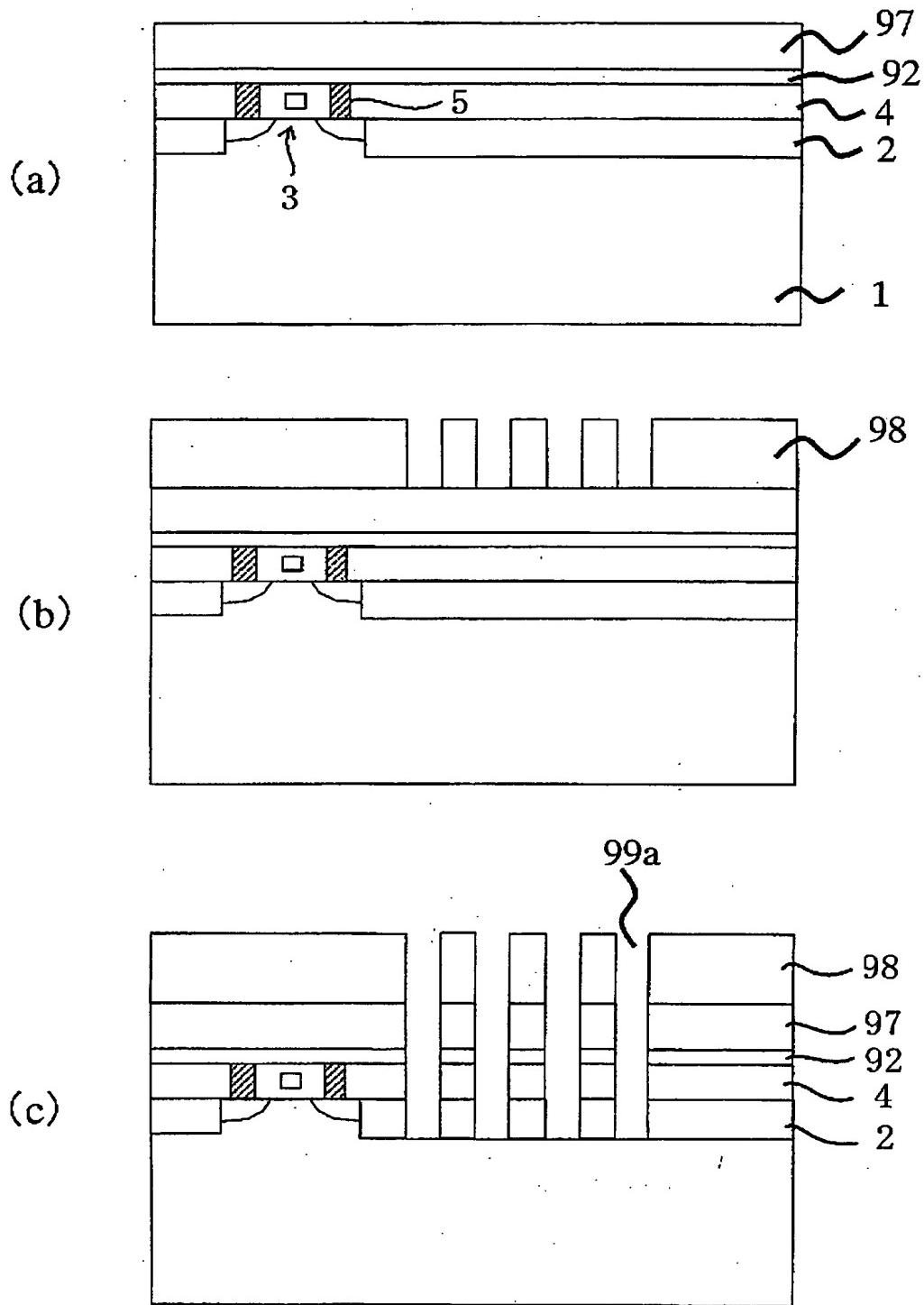
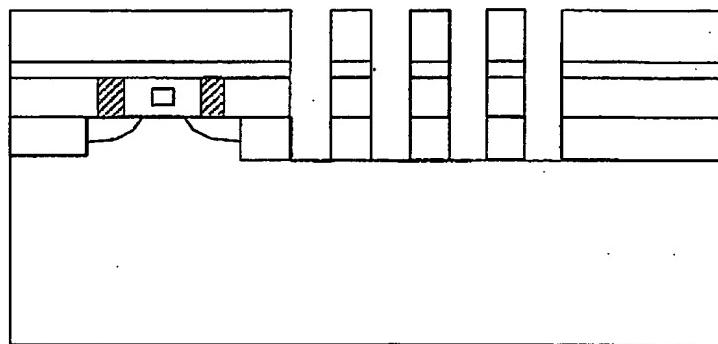
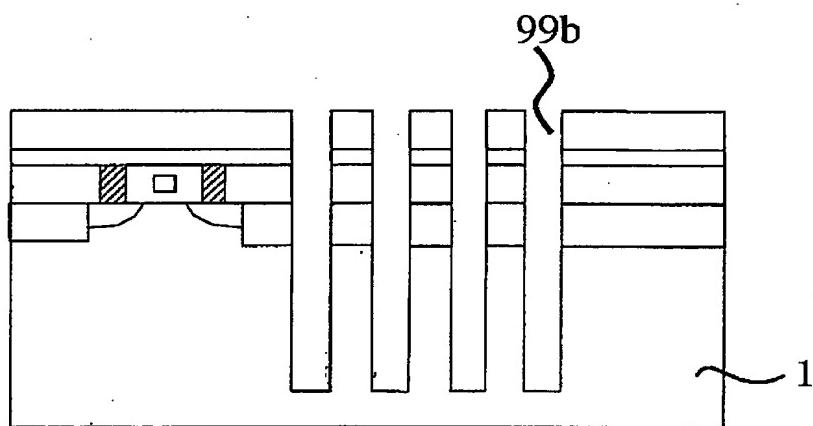


Fig. 43

(c),



(d)



(e)

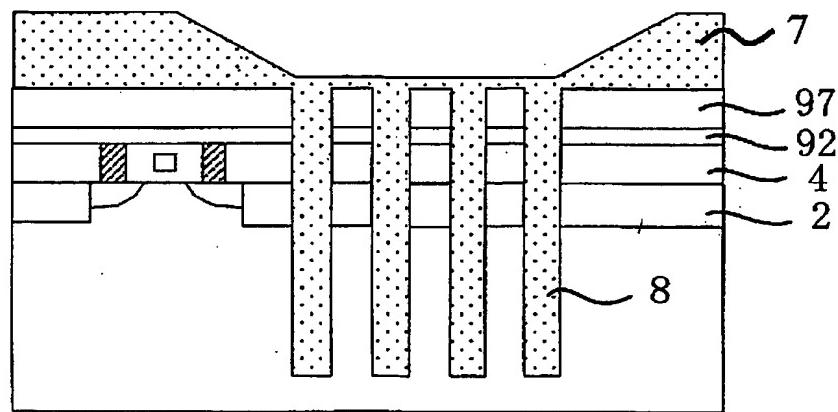


Fig. 44

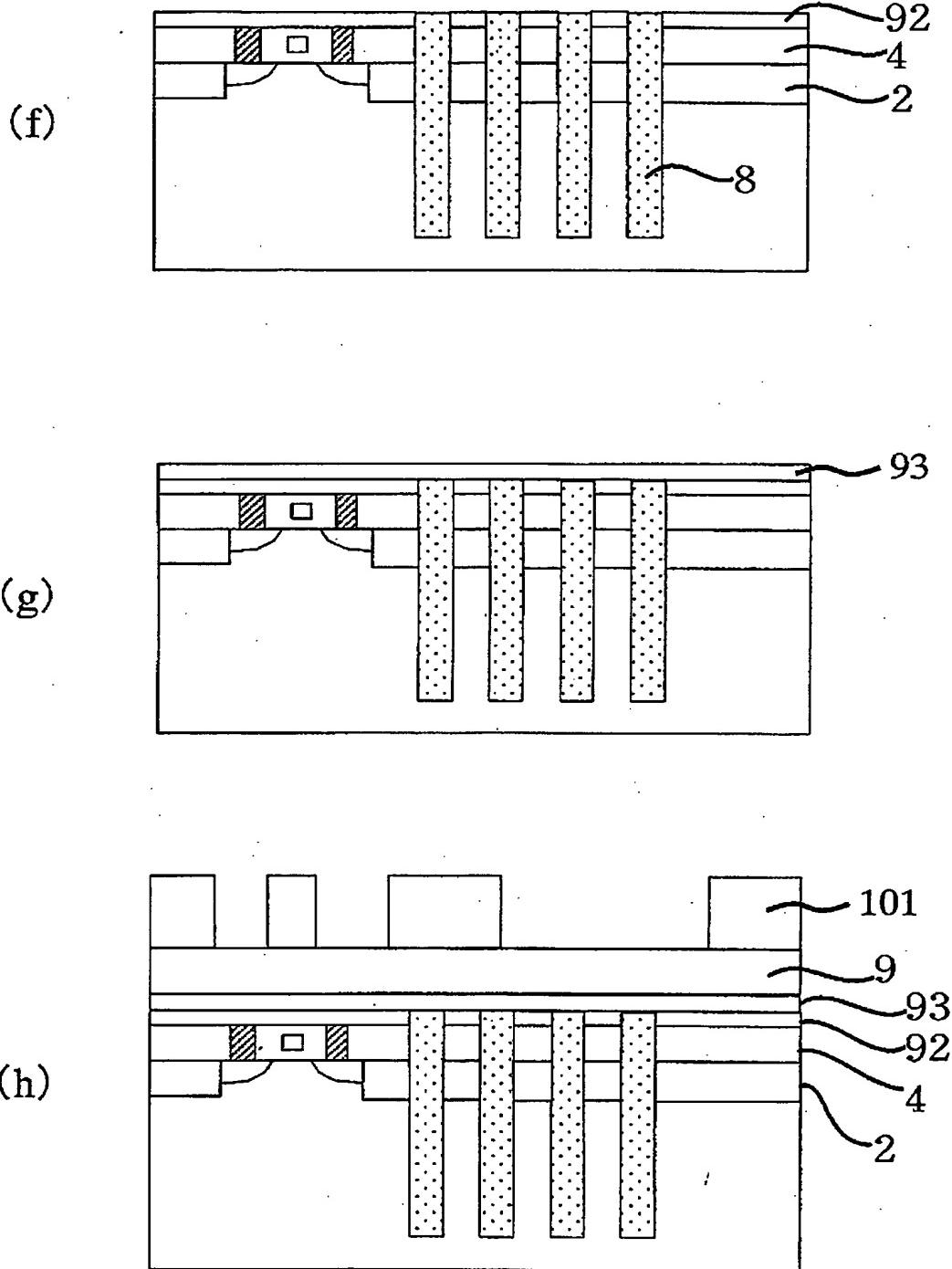


Fig. 45

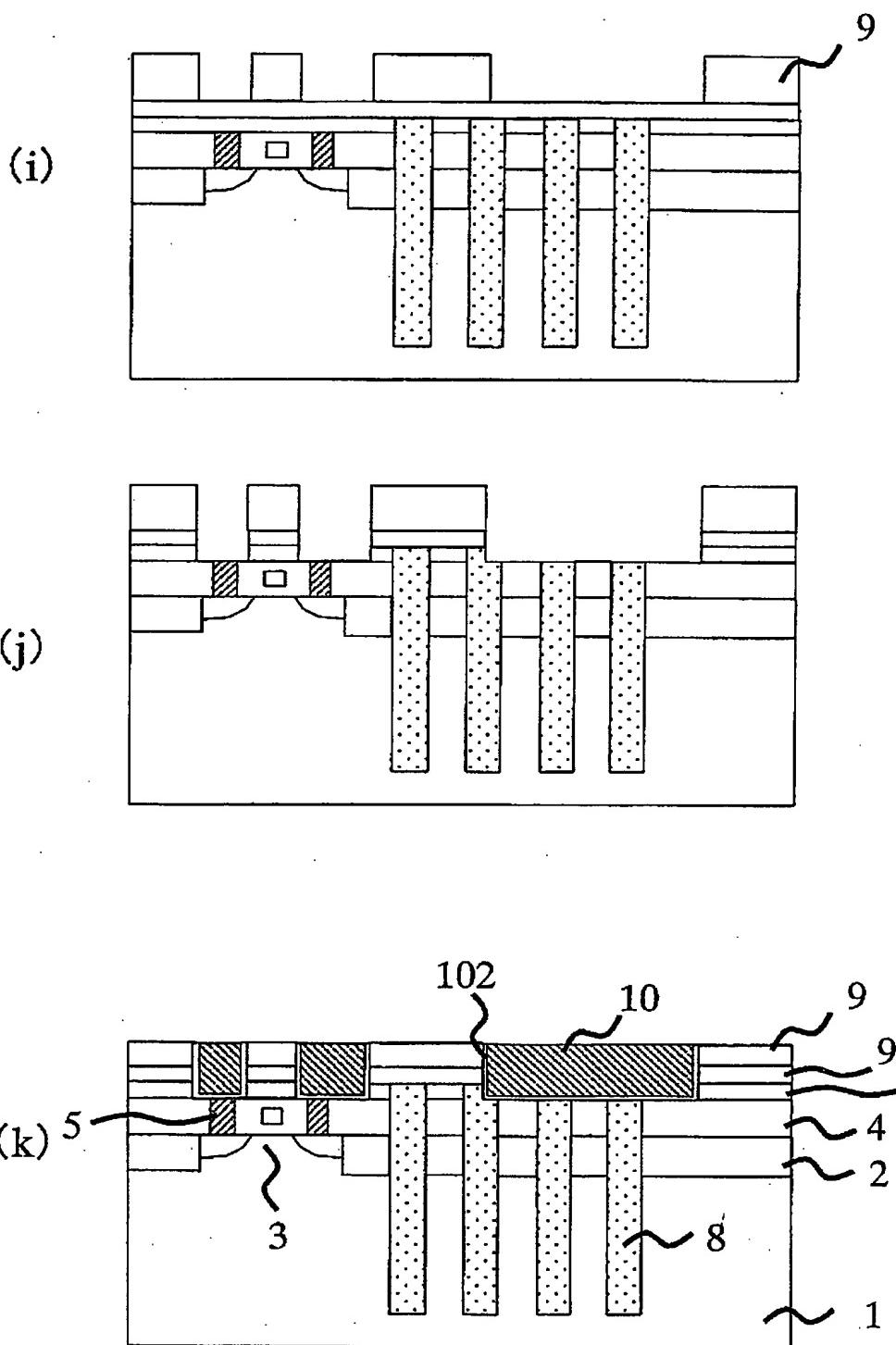
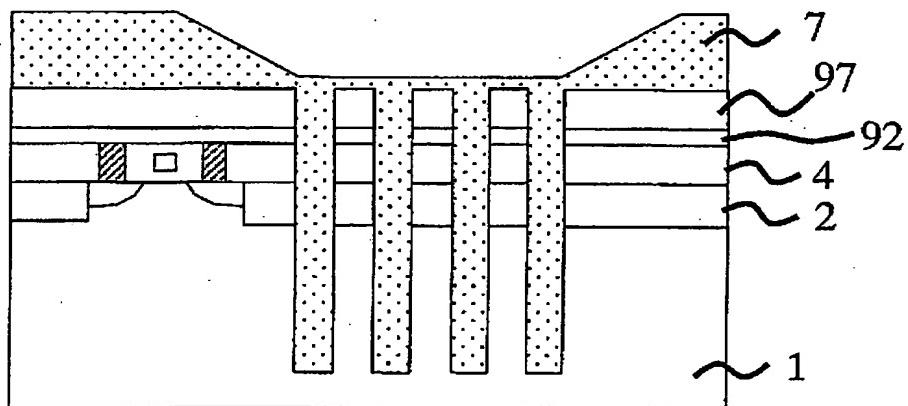
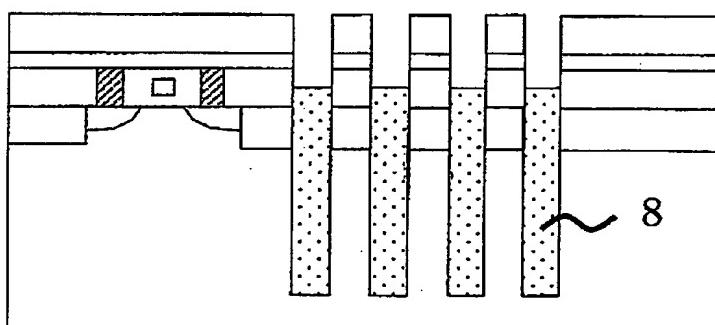


Fig. 46

(e)



(f)



(g)

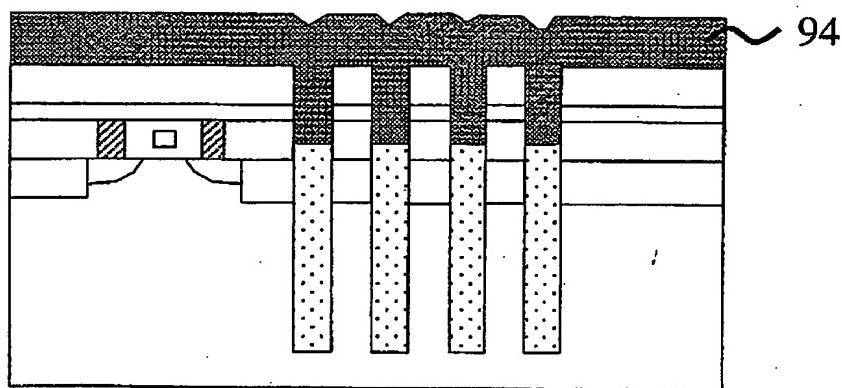


Fig. 47

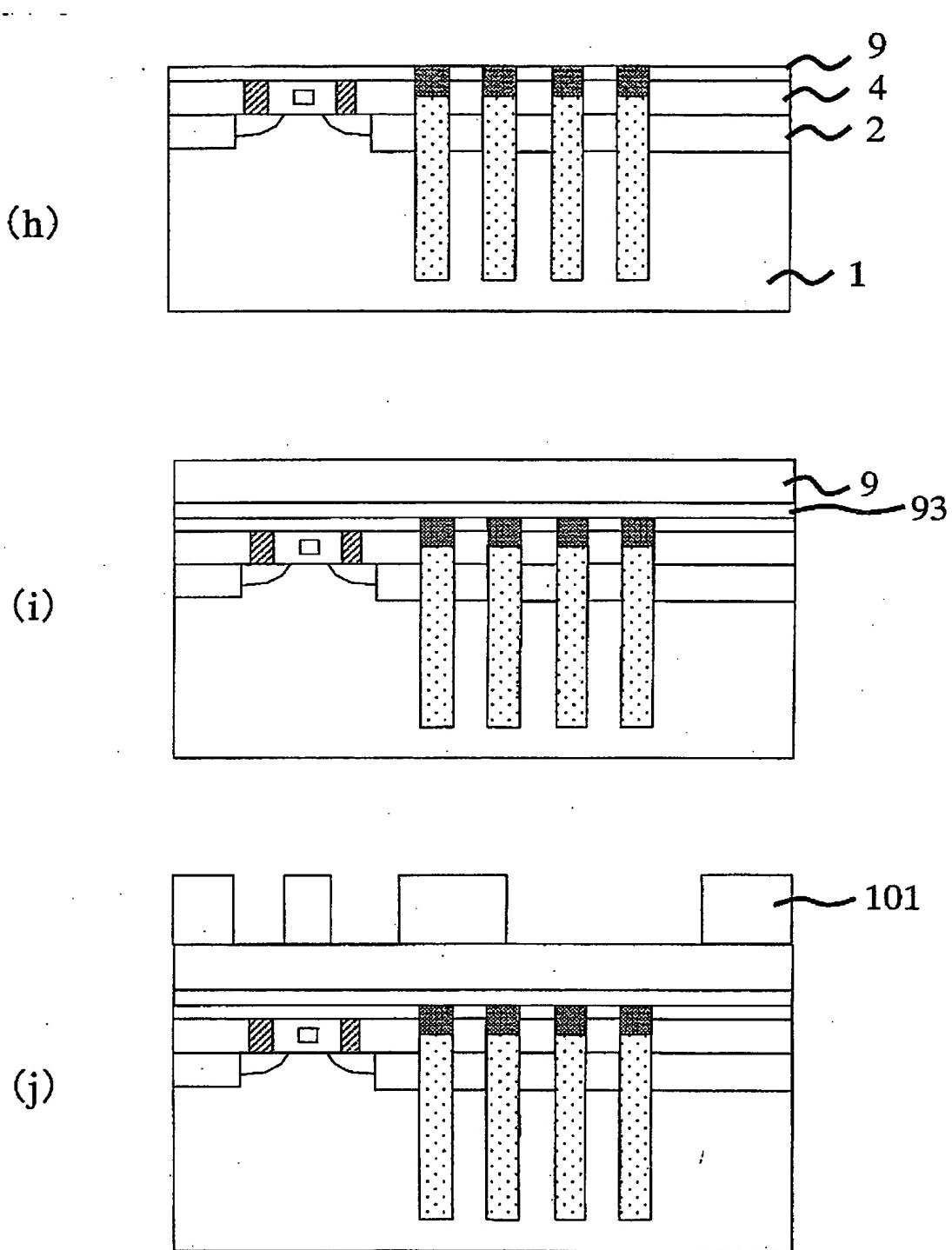


Fig. 48

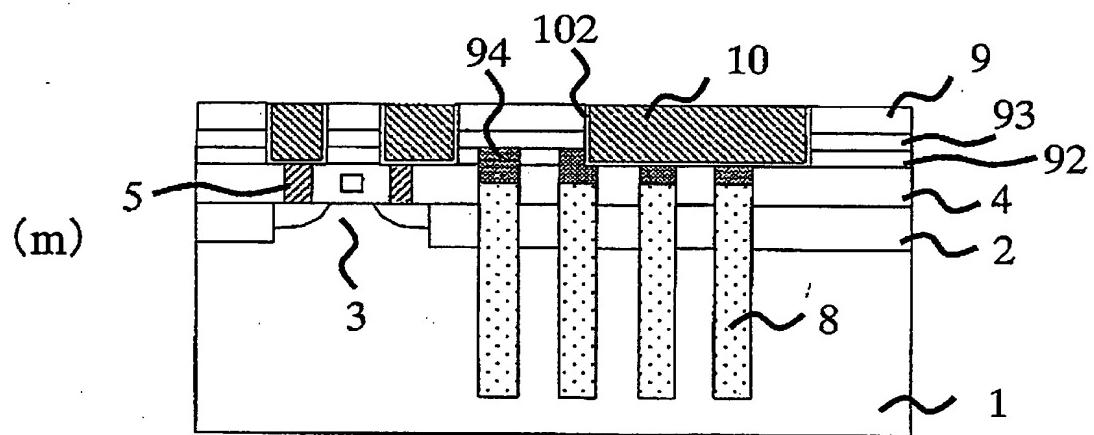
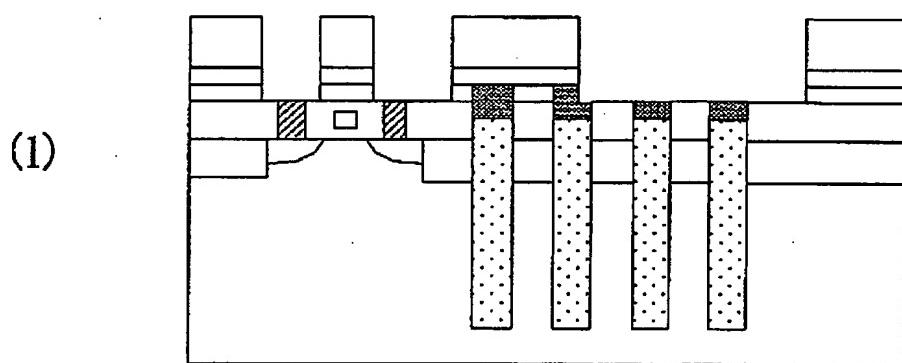
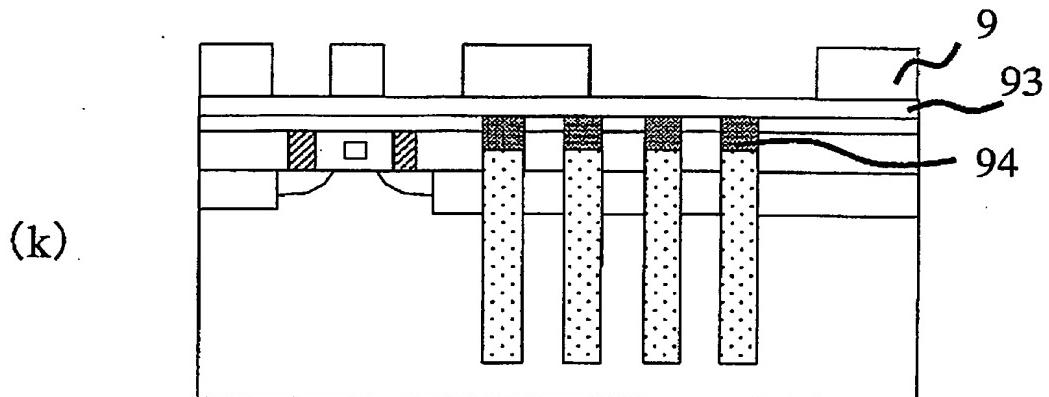
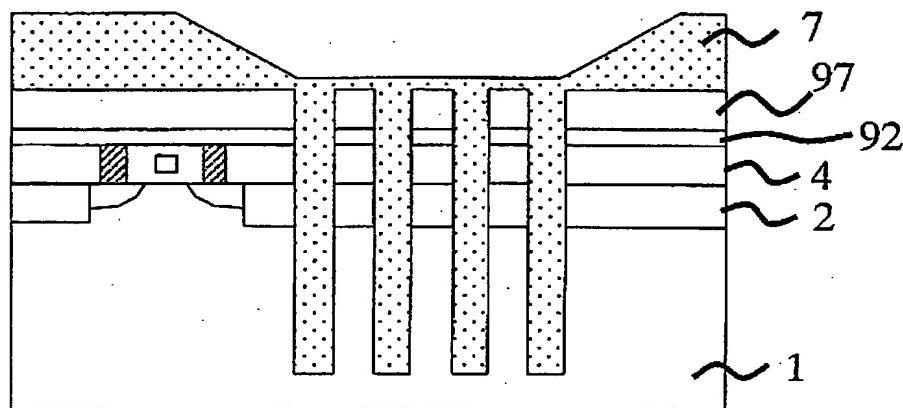
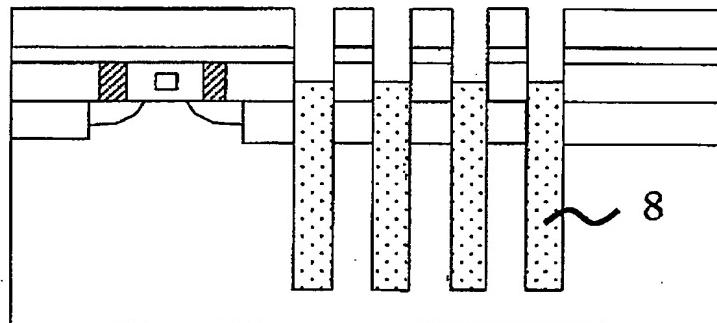


Fig. 49

(e)



(f)



(g)

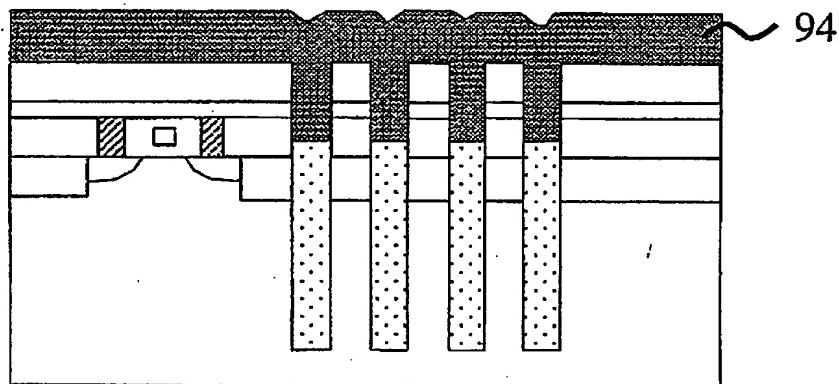
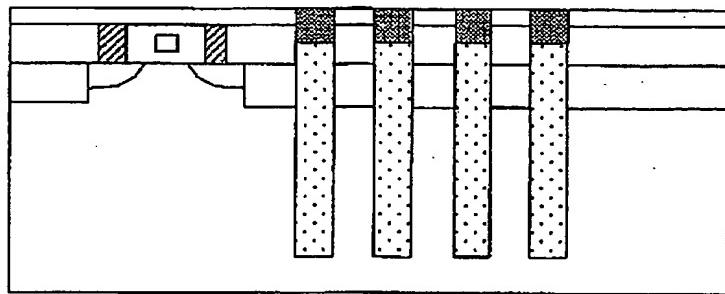
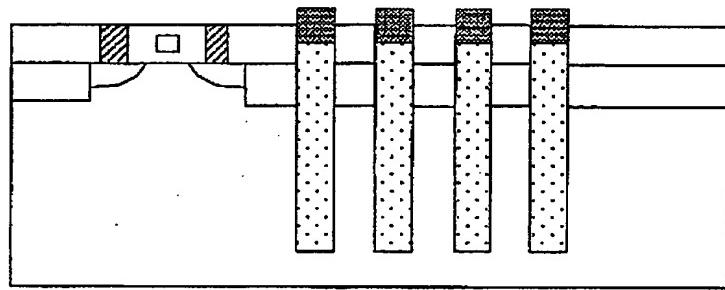


Fig. 50

(h)



(i)



(i)',

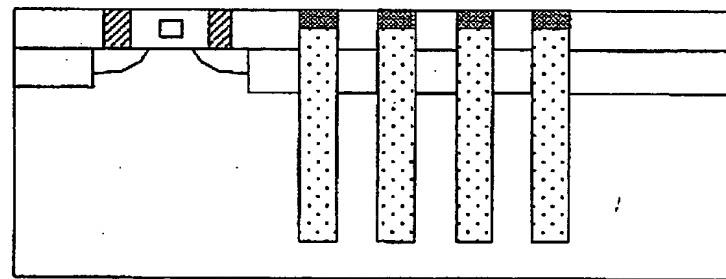


Fig. 51

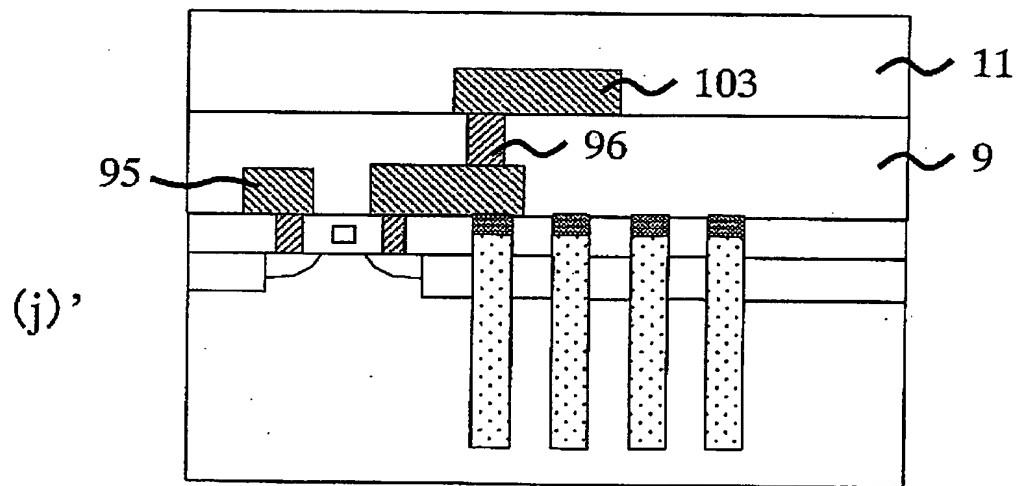
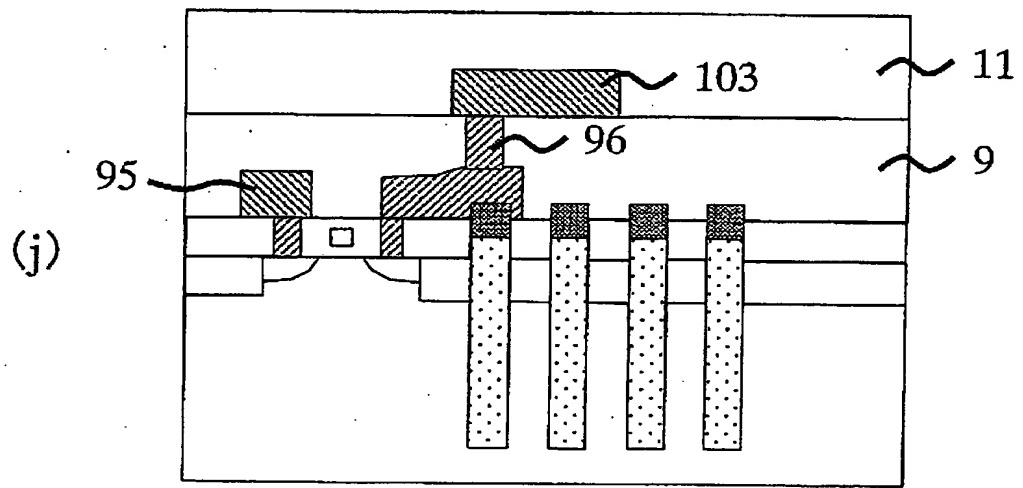


Fig. 52

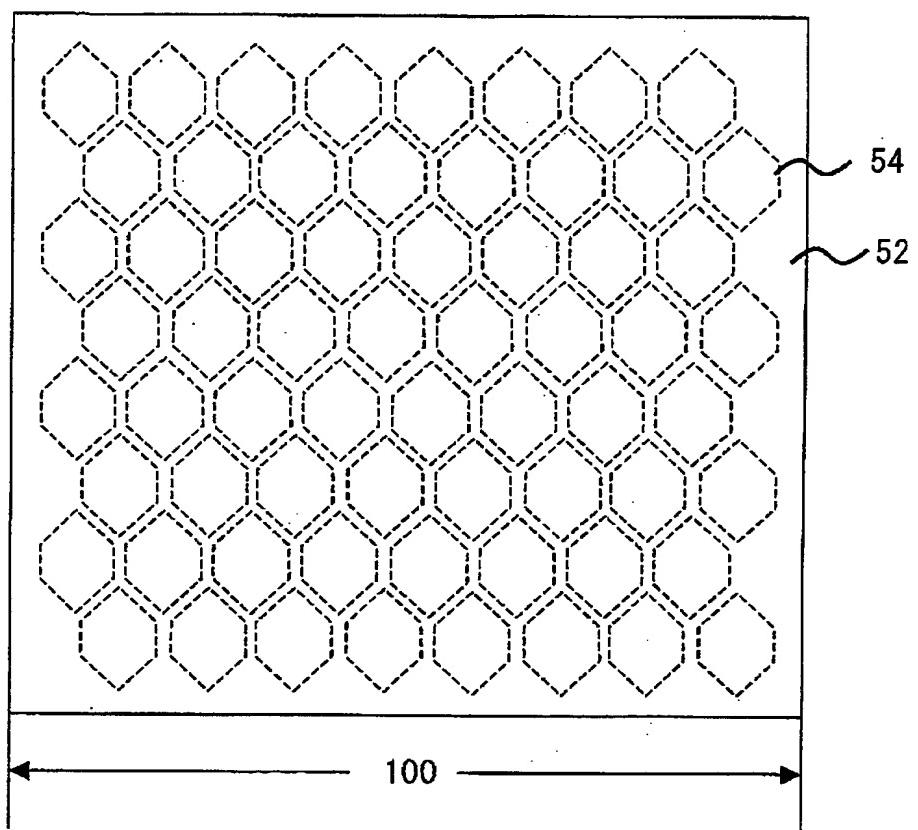


Fig. 53

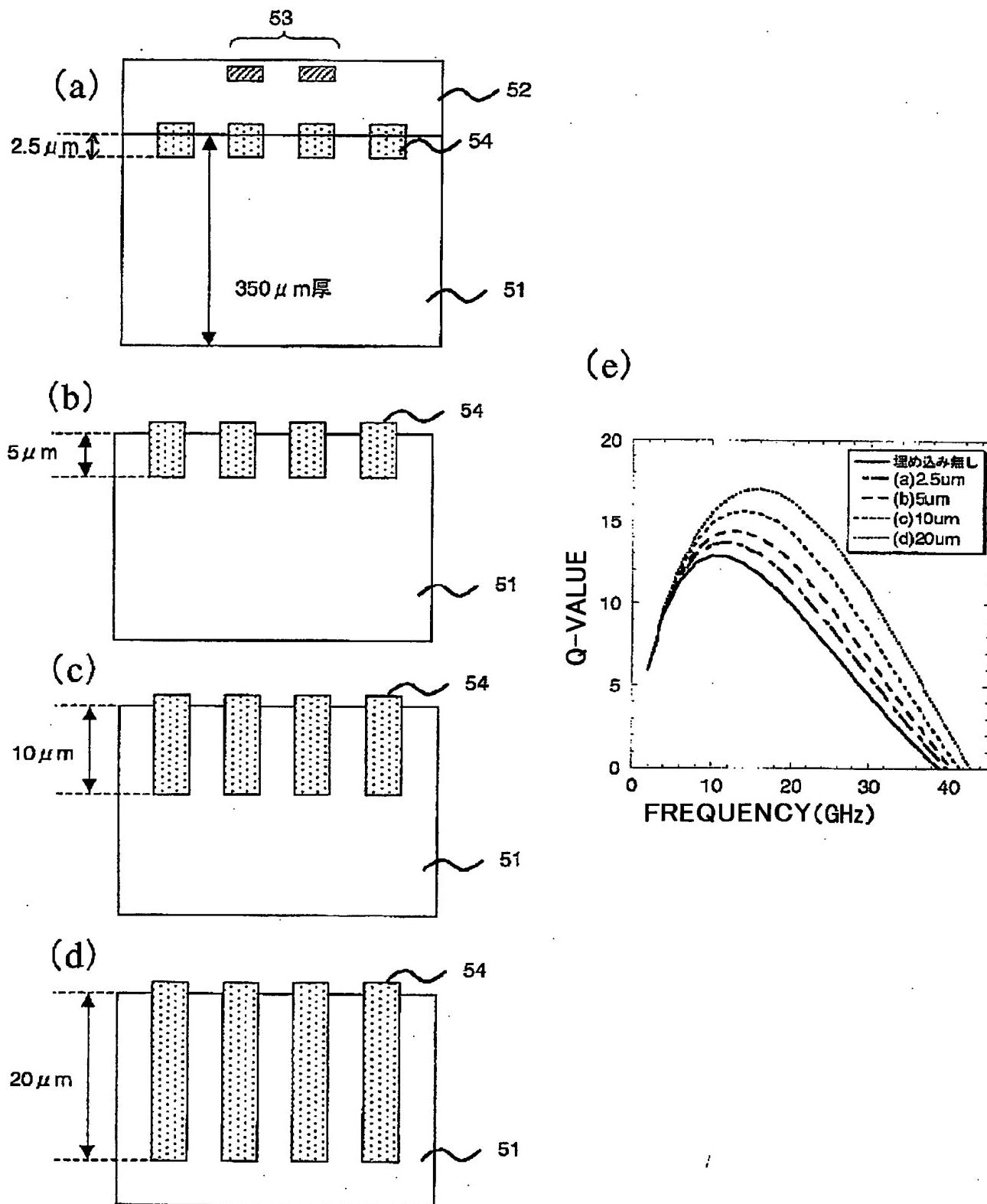


Fig. 54

